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**Journal for Educators, Teachers and Trainers, Vol. 14 (5)**

<https://jett.labosfor.com/>

Date of reception: 17 May 2023

Date of revision: 13 June 2023

Date of acceptance: 18 July 2023

**Helen TagasaAsio, Maria Cristina Lalaine ManuudNerona(2023). Student's Level Of Awareness, Experience And Perceived Competence On Research *Journal for Educators, Teachers and Trainers*,Vol. 14(5). 197-207**

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### ABSTRACT

This research paper aimed to find out the student's level of awareness and experiences in research and perceived competence in research writing and their relationships to the respondents' profile. It was conducted among 269 students at Isabela State University- City of Ilagan, Isabela during the second semester, S.Y 2021-2022. It made use of Descriptive Research Design using quantitative approach. A modified survey questionnaire was used. To analyze the data, Frequency and Percentage Count was used to analyze the respondent's profile; 5-point Likert scale to get the mean for the students' level of awareness, experiences in research and perceived level of competence; and Chi-square was employed to analyze the significant relationship among the variables. Among the significant findings: the respondents' level of awareness in research-related activities was rated "moderately aware" with a computed mean of 4.10; the extent of experiences in research is dependent to the age of the respondents; and respondents' perceived level of competence in writing research is rated "good"; There is significant relationship between the respondents' extent of experiences in research and their perceived level of competence in research writing; and there is significant relationship between the respondents' extent of experiences in research and their perceived level of competence in research writing. The result indicates that the respondents are moderately aware of the research-related activities in the school, and they are good in writing research. This implies that students' research writing skill needs to be strengthened particularly, writing abstract and conceptual framework of their researches.

**Keywords:** research awareness, competence, experience

### INTRODUCTION

The tertiary education sector is composed of all universities; colleges of education and technology and other institutes of post-secondary education (Amoo&Onuka 2011, Jubril 2013). The development of higher education or tertiary sector, teaching and use of university research publications are the most important factors of any developing/developed societies. This could also be one of the instruments of change especially in this fast changing world. The evidence of developed society could be found in thoughts of the founding philosophy and how developed are the tertiary educational institutions to achieve the goals guiding the establishment of those institutions. One thing is to have goals, the other thing is to pursue the goals for the development of the nation. One of the goals of tertiary shall be to contribute to national development through the provision of quality education which is attained in the conduct of research-based instruction.

Research becomes so important in human development and it plays an important role in each every human being. Life becomes easier, works become faster, new products, technologies are introduced, things keep changing because of research. Along this development, we cannot deny that the primary role of research is to enable man to have a better life (Ariola, 2006). Thus, research is everyone's business. But in academic context, research is not that simple. Research becomes academic term that attach to the meaning of education. Research is to carefully analyze the problem or to do the detailed study of the specific problem by the use of scientific method. University role has dramatically changed, and now these institutions as great contributor to public knowledge, a machine that would speed up economy, and as frontier of knowledge in the scientific and technological sphere. Now, universities and colleges convey their mission in line with these roles. (Geiger, 1986)

In some countries, Odeyemi (2004) noted that the difference between universities and other tertiary institutions is the fact that research takes place in universities. In such countries accordingly, universities have research culture in which it is assumed that most lecturers will engage in research. It also may also include all research institutes, experimental campuses and schools operating under the direct control of, or administered by, or associated with, the higher education establishments.

According to Seymour et al. (2004) and Hunter et al. (2007) Undergraduate Research Experience (URE) provides opportunities to foster and develop an extensive list of benefits to participating faculty and students. Gains commonly seen include increased awareness, increased clarity of future goals in STEM careers, gained knowledge of how to work like a scientist, enhanced graduate school readiness, and clarified perceptions.

UREs are also characterized by a number of the same features that educational researchers speculate are associated with the most effective types of authentic activities. First, UREs require that students have some prerequisite background knowledge of the domain or topic under investigation. Second, the skills taught are those that require higher order thinking such as forming and testing hypotheses, synthesizing information, and solving problems (Richmond, 1998). Third, the skills and activities require that students seek out information and integrate information across disciplines. Fourth, students are encouraged to set high standards for performance but at the same time to take risks and experiment with new strategies. Finally, the outcome of the authentic endeavor is complex and unpredictable (Newmann&Wehalage, and Paris & Turner, as cited in Ormrod, 1999).

Other frequently voiced outcomes include the acquisition of knowledge, research skills, and the attitudes of scientists (Ahlm, 1997); the ability to think independently (Ahlm, 1997; Manduca, 1997); growth in originality, creativity, initiative, curiosity, enthusiasm, and resourcefulness; the ability to communicate ideas; an understanding of theory and procedures; knowledge of pertinent literature; and adeptness in the field or laboratory (Davis & Glazier, 1997).

There is considerable consensus among program directors and faculty mentors regarding the outcomes that they expect students will acquire and demonstrate upon completion of UREs. Probably the most often cited outcome is the ability to "do science." This ability is typically defined as understanding a research problem in sufficient depth so as to be able to pose a question about it, determining what evidence is needed to solve the problem, and collecting the data that will answer the question (Manduca, 1997).

Of those with the awareness of URE opportunities, preconceived, false stereotypes such as the belief that research entails working in socially isolated environments can create barriers that deter students from participating. This and other misconceptions about the roles of a scientist in research can be dispelled through effective Undergraduate Research Experiences (Adedokun and Burgess 2011).

Research shows that a majority of students lack awareness of research opportunities being conducted within their own programs and the university at large. In a study conducted by Munawar (2015), aimed to determine research awareness, perceptions of competency, and research motivations in 20 first- and second-year bachelor of medicine/bachelor of surgery students at Shalamar Medical and Dental College at Lahore in Pakistan, only 10% of surveyed students were familiar with research opportunities at their institution.

Previous studies have shown that university students face many difficulties in learning research skills (Earley, 2014; Wagner, Garner & Kawulich, 2011) and even the most central concepts are not easy for students to learn (Murtonen, Aiston & Kiley 2006; Murtonen, 2015; Kiley & Wisker, 2009). For example, students in bachelor's and master's programmes have been reported to have substantial problems in the learning of the central conceptions of research methods, such as theoretic and empiric concepts (Murtonen 2015). We assume that understanding the most central scientific concepts, like concept of theory in this study, is a starting point to be able to learn more advanced research skills and thus, forms a starting point for research competence. Because university teachers are very familiar with these concepts, it may sometimes be difficult for them to understand that they are challenging for students to learn. Also, some teachers see students' research skills as more important than others and use different teaching methods to support their students' learning (Brew & Mantai, 2017; Lorencová, Jarošová, Avgitidou & Dimitriadou, 2019; Brew & Saunders, 2020). As Balloo (2019) states, teachers should be aware of the issues with which their students struggle in methodological courses and pay attention to see if the pedagogical approaches they are using are likely to help students to get over the possible barriers.

In the study Shahsavarand Kourepaz (2020), the descriptive analysis of the students' literature review shows that students focused more on summarizing of each work, linking with the purpose of study, awareness of different views, relationship of each work with other research, resolving conflicts among research, and filling gaps in the previous study.

According to Mabvuure (2012), the benefits we can glean from understanding students' awareness of research on campus are many. Knowing more may inspire students to participate in research by working on various projects, which both increases their capacity for understanding where the "evidence" in "evidence-based practice" truly comes from and enhances their critical appraisal skills. These skills along with awareness of the importance of research may increase their research engagement as they transition into practice as consumers of the literature, case report contributors, or participants in practice-based research networks

Research also shows that students perceived improvement in communication skills, conceptual and analytical thinking, understanding of scientific work, and confidence in problem solving (Lopatto 2003).

Despite national interest and increasing awareness of the benefits of UREs, research in this area is still emerging; there is much uncovered ground, many unanswered questions and unexplored issues regarding the

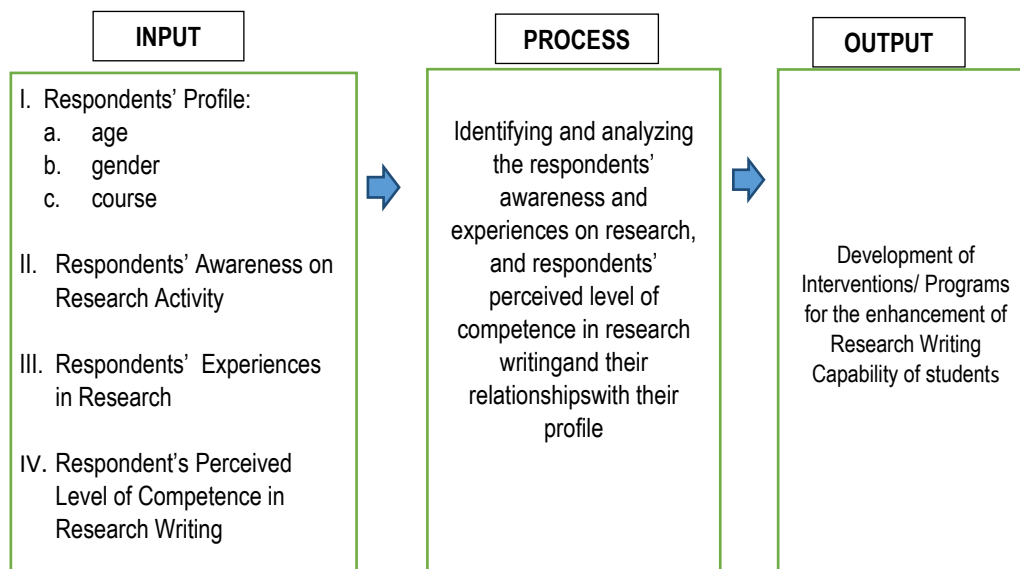
structures, contexts and dynamics of UREs. For example, while much is known about the benefits and gains of UREs and strategies for developing and implementing effective UREs, less is known about students' lived experiences in undergraduate research internships and learning processes. At Isabela State University City of Ilagan alone, among its 11 program offerings, eight courses are requiring research subject to their students. However, it is being observed that most of the students are only exposed to research writing when they are enrolled in the subject, few students involved in research-related activities conducted in the campus, and trainings to capacitate students' research writing skills are seldom conducted in the school.

Another gap in the URE literature is the lack of empirical evidence on research writing competence of student-researchers in relation to their profile age, sex and course.

Other limitations that we have observed include the lack of research on level of awareness of student-researchers to the different research-related activities conducted inside and outside their institution.

Clearly, these identified gaps cannot be exhaustively examined in a single book, manuscript or journal article. Addressing the paucity in URE research will require time and concerted efforts from researchers, and every little effort will contribute to the development of a holistic view of UREs. Hence, the focus of the current study is on the identified gaps: The students' level of awareness, extent of experience in research, perceived level of competence on research, and the relationships among these identified variables.

### Research Paradigm



### METHODOLOGY

This study employed descriptive research design using qualitative approach. The respondents of the study were the 269 students from the 11 programs of Isabela State University- City of Ilagan, Isabela who were enrolled in research writing subject for the second semester, S.Y 2021-2022. To gather the data needed, a survey questionnaire was used. It contained four components: The respondents' profile, respondents' level of awareness in research-related activities, respondents' experiences in research, and respondents' perceived level of competence in research writing.

Aside from the questionnaire, interview and documentary analysis were conducted to validate the answers of the respondents. To analyze the data gathered, the following statistical tools were utilized: Frequency and Percentage Distribution was used to analyze the respondents' profile; Mean was used to determine the respondents' level of awareness in research-related activities, respondents' experiences in research, and respondents' perceived level of competence in research writing using 5-point Likert scale; and to analyze the significant relationship among the variables such as: the relationship between respondents' profile and their level of awareness in research activities; between respondents' profile and their extent of experience in research; and between respondents' profile and their level of competence in research writing, Chi-square C – test was employed.

**RESULTS AND DISCUSSION**

**Table 1: Respondents' Profile in Terms of Age, Sex and Course**

Age	Frequency	Percentage
18-19	6	2.23
20-21	73	27.14
22-23	146	54.27
24-25	27	10.03
26-27	8	2.97
28 and above	9	3.34
Total	269	100

Sex	Frequency	Percent
Female	160	59.5
male	109	40.5
Total	269	100.0

Course	Frequency	Percent
Bachelor of Secondary Education	19	7.1
BS Architecture	3	1.11
BS Civil Engineering	91	33.8
BS Electrical Engineering	24	8.9
BS Industrial Technology	38	14.1
BS Information Technology	33	12.3
BS Midwifery	6	2.2
BS Nursing	17	6.3
BTLED	22	8.2
BTVTED	16	5.9
Total	269	100.0

Table 1 shows that out of 269 respondents, in terms of profile age, respondents were dominated by age brackets 22-23 with 146 or 54.27 percent. As to profile sex, female dominated, with 160 or 59.5 percent; and as to profile course, Bachelor of Science in Civil Engineering dominated, with 91 or 33.8 percent.

**Table 2: Respondents' Level of Awareness in the Research- Related Activities Conducted in the School**

Ii. Respondents' Level Of Awareness In Research-Related Activities Conducted In The School	Mean	Description
1. Research seminars are organized for research capability building among student researchers	4.10	moderately aware
2. Research conference are organized where students and/or lecturers present their research works	4.17	moderately aware
3. Research posters are prepared for research seminars	3.96	moderately aware
4. Students are supervised when they do research	4.25	moderately aware
5. Student researches are subject for oral evaluation (proposal and final) before panel of evaluators	4.46	moderately aware
6. There is a conduct of selection for best undergraduate and graduate student researches	4.25	moderately aware
7. Research works are published in reputable journal	4.12	moderately aware
8. Research outputs are available at campus library	4.22	moderately aware
9. Incentives are given to best student researchers during agency in-house review	3.72	moderately aware

10. Student are encouraged to have collaboration with other funding agencies	3.78	moderately aware
Mean	4.10	moderately aware

As to the respondents' level of awareness on the research activities conducted in the school, with the 10 indicators, all or 10 indicators were rated moderately aware and it has a total computed mean of 4.10.

Out of 10 indicators, indicator #5: "Student researches are subject for oral evaluation before panel of evaluators" got the highest mean, 4.46 which is described as moderate aware, and the lowest, indicator # 9: Incentives are given to best student researchers during agency in-house review with 3.72 which is described as moderately aware.

The result implies that student are informed that student researches are screened by panel evaluators, however, many students are unaware that the school provides incentives to the best research papers among student researchers.

**Table 3: Significant Relationship of the Respondents' Level of Awareness on Research Activity Conducted in the School and Their Profile**

Profile	Probability	Decision	Remarks
Age	.942	Accept Ho	There is No Significant Relationship
Gender	.013	Reject Ho	There is Significant Relationship
Course	.056	Accept Ho	There is No Significant Relationship

Table 3 shows the significant relationship of the respondents' level of awareness on the research activity conducted in the school and their profile using Chi-square C – test at 0.05 level of significance.

As revealed in the table, the probability values for age and course in the above table were greater than 0.05. The null hypothesis was accepted. There is no significant relationship between respondents' level of awareness on the research activity conducted in the school and their profile age and course.

For gender, the probability value was less than .05, hence, the rejection of the null hypothesis. There is significant relationship between respondents' level of awareness on the research activity conducted in the school and their profile gender.

Results indicate that level of awareness on the research activity conducted in the school is independent from profile age and course of the respondents, however, it is dependent to the gender of the respondents.

Hence, age and course are variables that do not influence the level of awareness on the research activity conducted in the school but significantly affected by the gender of the respondents specifically by female respondents (Mean = 4.19) than the male respondents (Mean = 3.98).

The result of the study conforms the findings of the study of Gaspar et al., (2019) when she revealed that there is no significant difference in the level of awareness to the environmental programs of Lyceum of the Philippines Cavite as grouped according to gender of students in different college departments of the university. The significance of a gender orientation is unrelated to the students of being aware of the University's Environmental Management System.

**Table 4: Respondents' Extent of Experience in Research**

Respondents' Perceived Level Of Competence In Research Writing	Mean	Description
1. Formulating the research title	4.10	good
2. Writing the introduction	4.08	good
3. Formulating Statement of the Problem	4.10	good
4. Writing Significance of the study	4.14	good
5. Defining Terms	4.23	good
6. Identifying/Selection of Related literature and Studies	4.13	good
7. Formulating hypothesis	4.08	good
8. Developing Research Tools and Instruments	4.05	good

9. Writing and Discussing the Results of the Study	4.12	good
10. Making Conceptual Framework	4.03	good
11. Adopting the Correct Methodology	4.06	good
13. Writing and discussing the results of study	4.10	good
14. Making conceptual framework	4.03	good
15. Adopting the correct methodology	4.06	good
16. Presenting and Analyzing Data	4.09	good
17. Writing the Summary of Finding	4.10	good
18. Making Conclusion and Recommendation	4.11	good
19. Writing Bibliography	4.11	good
20. Writing the Abstract	4.03	good
21. Analyzing Data	4.09	good
Mean	3.90	good

With regard to the respondents' experiences in research, it has an overall computed mean of 3.80 with a descriptive rating often. Out of 8 indicators, Six (6) were rated often while the other two were rated 3.49 and 3.45 with a descriptive rating sometimes. Among the 8 indicators, indicator #7, "As a part of course, I conduct a research project (e.g. doing an experiment in a lab, administering an interview, developing a solution for a particular problem, preparing a dissertation)" got the highest mean 4.11 with a descriptive rating often, and the lowest, indicator #4: "I participate at scientific conferences and workshop" with a mean 3.45 with a descriptive rating sometimes.

The result shows that students are doing research since it is one of the course requirements to earn a degree. Students are not well-motivated to participate in scientific conferences and workshop.

**Table 5: Significant Relationship of Respondents' Extent of Experiences in Research and Their Profile**

Profile	Probability	Decision	Remarks
Age	.001	Reject Ho	There is Significant Relationship
Gender	.626	Accept Ho	There is No Significant Relationship
Course	.251	Accept Ho	There is No Significant Relationship

Table 5 shows the significant relationship of the respondents' extent of experiences in research and their profile using Chi-square C – test at 0.05 level of significance.

As revealed in the table, the probability values for gender and course in the above table were greater than 0.05. The null hypothesis was accepted. There is no significant relationship between respondents' extent of experiences in research and their profile gender and course.

For age, the probability value was less than .05, hence, the rejection of the null hypothesis. There is significant relationship between respondents' extent of experiences in research and their profile age.

Results indicate that extent of experiences in research is independent from profile gender and course of the respondents, however, it is dependent to the age of the respondents.

Hence, gender and course are variables that do not influence the extent of experiences in research but significantly affected by the ages of the respondents specifically those who are 29 years old and above.

**Table 6: Respondents' Perceived Level of Competence in Research Writing**

Respondents' Experiences In Research	Mean	Description
1. Guest speakers present their scientific work during classes.	3.79	Often
2. I read scientific articles and reports for my research subject.	4.01	Often
3. I voluntarily participate in research seminars. (seminars in which research is presented and discussed)	3.49	sometimes
4. I participate at scientific conferences and workshop.	3.45	sometimes
5. I assist as a respondent in scientific research (e.g. fill in questionnaire, interviewee, etc.)	3.89	often
6. I participate in data collection and data analysis of scientific research (e.g. analysis of interviews or data from a lab, analysis of questionnaire).	3.94	often
7. As a part of course, I conduct a research project (e.g. doing an experiment in a lab, administering an interview, developing a solution for a particular problem, preparing a dissertation).	4.11	often
8. I collaborate as research assistant in research projects, apart from the formal requirements of my program.	3.71	often
Mean	3.80	often

Pertaining to the respondents' perceived level of competence in research writing, it has a computed mean of 3.90 which is good. Among the 21 indicators, all got a descriptive rating good. Indicator #5, "Defining Term" got the highest mean 4.23 which is described as good. The lowest, indicator # 10 "Making Conceptual Framework", and "Writing the Abstract" with a mean 4.03 respectively which is described as good.

As stated, understanding the link between theory and research is causing problems for students as well (Kiley 2015; Murtonen 2015). Defining the concept of theory is not unambiguous because the concept is used in many different ways (Kiley 2015, 52; Kuhn & Pearsall 2000, 116; Murtonen et al., 2006, 142; Tight 2015, 86). Many concepts are understood differently in everyday speech and within academic communities. Understanding the scientific meaning of the concept of theory may be difficult for students because of the way the concept is used in everyday speech, which is more familiar to them than in academic use, especially at the beginning of their studies.

Previous studies have shown that university students face many difficulties in learning research skills (Earley, 2014; Wagner, Garner & Kawulich, 2011) and even the most central concepts are not easy for students to learn (Murtonen, Aiston & Kiley 2006; Murtonen, 2015; Kiley & Wisker, 2009).

**Table 7: Significant Relationship of Respondents' Perceived Level of Competence in Research Writing and Their Profile**

Profile	Probability	Decision	Remarks
Age	.001	Reject Ho	There is Significant Relationship
Gender	.599	Accept Ho	There is No Significant Relationship
Course	.000	Reject Ho	There is Significant Relationship

Table 7 shows the significant relationship of the respondents' perceived level of competence in research writing and their profile using Chi-square C – test at 0.05 level of significance.

As revealed in the table, the probability value for gender in the above table were greater than 0.05. The null hypothesis was accepted. There is no significant relationship between respondents' perceived level of competence in research writing and their profile gender.

For age and course, the probability values were less than .05, hence, the null hypothesis is rejected. There is significant relationship between respondents' perceived level of competence in research writing and their profile age and course.



Results indicate that level of competence in research writing is independent from profile gender of the respondents, however, it is dependent to the age and course of the respondents.

Hence, gender is a variable that do not influence the level of competence in research writing but it is significantly affected by the age and course of the respondents, specifically those who are 33years old and above and who are enrolled in BS Industrial Technology and BS Information Technology.

The result of this study conforms the findings of Kardash (2000). It was revealed that male and female interns did not differ significantly in their ratings of skill levels at the beginning of the URE. As indicated by the results male interns rated themselves significantly higher than did female interns with respect to their ability to understand contemporary concepts in their field, however, there were no significant gender differences on any of the other research skills.

**Table 8: Significant Relationship between the Extent of Experiences in Research and Their Perceived Level of Competence on Research Writing**

Group	Probability	Decision	Remarks
Extent of Experiences in Research and Perceived Level of Competence on Research Writing	.000	Reject Ho	There is Significant Relationship

Table 8 shows the significant relationship between respondents' Extent of Experiences in research and their Perceived level of Competence on Research Writing using Pearson's Coefficient of Correlation  $r$  – test at 0.05 level of significance.

As revealed in the table, the probability value was less than 0.05. The null hypothesis was rejected. There is significant relationship between between the respondents' Extent of Experiences in research and their Perceived level of Competence on Research Writing.

This indicates that the respondents' extent of experiences in research and their perceived level of competence on research writing significantly affects each other.

### CONCLUSIONS

1. The Isabela State University, particularly City of Ilagan is dominated by female students; within the age bracket 22-23; and dominated by civil engineering course.
2. The respondents are moderately aware, which means that half or more than 50% of the respondents are informed, with the different research-related activities held in the school.
3. The respondents' extent of experiences in research is independent from their profile gender and course, however, it is dependent to their age which means that gender and course are variables that do not influence the extent of experiences in research but significantly affected by the respondents' age.
4. The respondents' perceived level of competence in writing research is rated good, and it is independent from the respondents' profile gender. However, it is dependent to the age and course of the respondents. It implies that regardless of gender, research writing competence is not affected, but as to the course, Civil Engineering students, with the age bracket of 22-23, are not fully equipped with knowledge and skills in research writing.
5. There is significant relationship between the respondents' Extent of Experiences in research and their Perceived level of Competence on Research Writing. This indicates that the respondents' extent of experiences in research and their perceived level of competence on research writing significantly affects each other.
6. There is significant relationship between the respondents' Extent of Experiences in research and their Perceived level of Competence on Research Writing. This indicates that the respondents' extent of experiences in research and their perceived level of competence on research writing significantly affects each other.

### RECOMMENDATIONS

1. The administration with the support of the faculty, is encouraged for further promotion of giving Incentives to best student researchers during agency in-house as part of motivation to the students to be engaged in research activities.

2. As much as possible, all faculty regardless of subjects they teach or program they belong, apply research-related activities as part of their assessment activities in their class to strengthen the knowledge and skills of students in doing research.
3. Conducting research capability building, giving emphasis in making of conceptual framework and abstract, among students can be considered by the different colleges.

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