

Work Readiness of Select Graduating Students of Mindanao State University Iligan Institute of Technology

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Abstract— As thousands of students graduate each year, many find themselves unemployed because of skills gaps brought about by low work readiness levels. Literature claims that skills gap is a result of a combination of a variety of factors inherent in graduates, and a failure to establish academe-industry links to prepare students with the right skills set currently demanded in the workplace. In response, this paper studied the work readiness levels of select graduating students from Mindanao State University Iligan Institute of Technology to investigate the presence of skills gaps with respect to the graduating students' profile, and the relationship between such gaps and the ethnicity and sex of the graduating students. This was done with the objective of understanding how well prepared graduating students are for the challenges of the workplace, and consequently develop measures to improve their work readiness levels. Findings reveal that there are significant differences in the required and perceived work readiness levels of all Business Management graduating students, regardless of their ethnicity and sex, but not for the Computer Studies graduating students. The findings also established a relationship between work readiness gap and the students' ethnicity. Results show that Visayan graduating students tend to have narrower skills gaps, and thus higher work readiness levels, than Moro graduating students. On the other hand, no relationship could be established between the sex of graduating student and skills gap, therefore concluding that sex does not impact work readiness level and skills gap.

Keywords — gender skills gap, racial skills gap, skills gap, work readiness, work readiness levels

I. INTRODUCTION

Organizations around the world are finding themselves facing a workforce dilemma of a lack of job applicants with the right skills needed to help them grow and succeed. This phenomenon, which has come to be known as skills gap, is now a concern of governments, industries and schools as they panic to look for ways to correct education and training issues in order to produce better skilled and work-ready graduates. In the Philippines, skills gaps have also emerged. The Philippine Skills Report and reports by the Commission on Higher Education and Department of Labor and Employment claim that many Filipino employers in the services and manufacturing industries are finding it increasingly difficult to fill entry level vacancies in various fields, including business management and information technology, because of the skills gap.

Skills gap is defined as a gap between the skills needed for a job requiring a given level of education versus those skills possessed by workers or job applicants with a similar level of education (LeFbvre, 2013). Literature explains that this gap can be the result of two skills-mismatch situations, either there is an outright lack of or insufficient number of applicants for a particular field of occupation and thus workforce supply cannot fulfil the labor demands of an industry, or applicants lack basic soft and hard skills that employers deem necessary for an individual to be employed in a specific occupation. In

Philippine context, it appears that the leading reason why employers have difficulty filling up vacancies despite large number of applicants is because of quality issues (shortage of applicants with the right competencies for the job). This leads to a high incidence of educated yet unemployed youth, which further suggests a disconnection between skills produced in the skills system and the requirements of the labor market (Riguer, 2009). Filipino college graduates accordingly lack generic, technical or job-specific and sometimes even basic academic skills (PSR, 2010; Buendia, 2011). In addition to these factors, there are also personal factors inherent in students that are attributed to the skills gap. Studies show that certain ethnicities and genders tend to have smaller skills gaps and are thus considered to be more work-ready than other students.

This calls for the use of an appropriate term to identify the collection of skills needed for employment, and an instrument or measure to help us quantify the gap. Currently, there are many different terms for this purpose, all referring to a collection of soft or hard skills or a combination of both. These terms include among others employability skills, personal skills and transferable skills. A term comprehensive enough to include personal, organizational, academic, technical and social skills is work readiness, which is defined as the extent to which graduates are perceived to possess work-necessary skills, attitudes and attributes that make them prepared or ready for success in the work environment (Raftapolous, 2006; Caballero & Walker, 2010). Researchers believe that improving the work readiness levels of graduates can narrow the skills gap and decrease youth unemployment rate.

The purpose of this paper is to study how work readiness and skills gaps apply to graduating students majoring in the fields of Business Management and Computer Studies at the Mindanao State University – Iligan Institute of Technology (MSU-IIT). Using the Work Readiness Scale developed by Caballero, Tyszkiewicz and Walker, it measured the required work readiness levels of select local employers and perceived work readiness levels of graduating students to identify significant gaps. It also compared the work readiness levels to the ethnicity, which in this paper was limited to Visayan and Moro being the predominant ethnic affiliations among respondents, and sex of the graduating students, to determine if racial background and sex are factors in the acquired work readiness level of a graduating student.

II. RESEARCH DESIGN

Primary data was collected through survey questionnaires based on the Work Readiness Scale developed by Caballero, Walker and Tyszkiewicz (2011) in their study *The Work Readiness Scale (WRS): Developing a Measure to Assess Work Readiness in College Students*. Four components comprise the work readiness scale, and these are personal characteristics, organizational acumen, work competence and social intelligence. Each component measures a set of work readiness skills and values that is essential to employability and the workplace. Reliability analysis revealed that the work

readiness scale has a good internal consistency, with a Cronbach's alpha value of 0.96. The four factors also had good internal consistency with Cronbach's alpha value of 0.93 for Personal Characteristics, 0.92 for Organizational Acumen, 0.90 for Work Competence and 0.88 for Social Intelligence.

The instruments were administered to graduating students, educators and employers. For graduating students, questionnaires were either group administered or administered via web through the use of an online survey. As for educators and employers, questionnaires were personally delivered, explained to them, and collected after an average period of two weeks. Graduating students and educators came from the Business Management and Computer Studies fields while employers came from the manufacturing, banking and fast-food local industries.

In computing sample sizes of graduating students, the Slovin's Formula and a two stage stratified random sampling technique were used to determine sample sizes by college, course, ethnicity and sex. This ensured an adequate representation of each group of respondents. Samples were drawn at a 5 percent margin of error.

The total sample size was 272 graduating students, with 155 and 117 from the Business Management and Computer Studies fields respectively. The Business Management sample contained 136 Visayan, 19 Moro, 44 male and 111 female graduating students, while the Computer Studies sample contained 107 Visayan, 10 Moro, 62 male and 55 female graduating students. Overall, there were 243 (89%) Visayan, 29 (11%) Moro, 106 (39%) male and 166 (61%) female graduating students.

For educators, a list of faculty teaching the participating graduating students was secured. Hence, only 16 educators from both fields were surveyed. These educators were then given questionnaires to assess the graduating students' work readiness. As for employers, HR managers and department heads of business and computer related processes were requested to participate. A total of 17 employer-respondents representing six companies of the city's main industries were surveyed.

To develop the work readiness profile, the average mean of perceived work readiness levels of graduating students was compared to the average mean of required work readiness levels of employers. This was done after gathering the perceptions of graduating students and educators, and through the use of average weighted mean, produce the overall perceived work readiness levels. A weight of 60 percent was given to the responses of the graduating students and a weight of 40 percent was given to the responses of the educators. This method was employed to decrease the bias inherent in the graduating students' self assessment. Welch-Satterthwaite t-tests and Chi Squared tests were then performed to identify significant differences between the required and perceived work readiness levels, and the relationship of these differences to the graduating students' ethnicity and sex.

III. RESULTS AND DISCUSSION

Tables 1 and 2 present the results of the required and perceived work readiness levels by college or field of study. It appears from the data that on the average, employers require excellent work readiness levels while students possess only good work readiness levels.

Table 1 Summary of Work Readiness Levels of Business Management

Work Readiness Factor	Employers (Required WRLs)	Business Management Graduating Students (Perceived WRLs)				
		All	Visayan	Moro	Male	Female
Personal Characteristics	3.48	3.19	3.19	3.15	3.16	3.20
Organizational Acumen	3.34	3.15	3.16	3.12	3.15	3.16
Work Competence	3.31	3.04	3.05	3.00	3.00	3.06
Social Intelligence	3.27	3.09	3.10	3.07	3.05	3.11
TOTAL WRL	3.35	3.12	3.12	3.09	3.09	3.13
REMARK	Excellent	Good	Good	Good	Good	Good

Table 2 Summary of Work Readiness Levels of Computer Studies

Work Readiness Factor	Employers (Required WRLs)	Business Management Graduating Students (Perceived WRLs)				
		All	Visayan	Moro	Male	Female
Personal Characteristics	3.39	3.19	3.19	3.23	3.21	3.16
Organizational Acumen	3.29	3.09	3.09	3.14	3.09	3.10
Work Competence	3.31	3.01	3.02	2.96	3.09	2.93
Social Intelligence	3.25	3.06	3.05	3.14	3.12	3.01
TOTAL WRL	3.31	3.09	3.09	3.12	3.13	3.05
REMARK	Excellent	Good	Good	Good	Good	Good

Gaps can be readily seen in the required and perceived work readiness levels shown in the tables above. It appears from the data that on the average, employers require excellent work readiness levels while students possess only good work readiness levels. This finding is consistent with the finding of the 2009 World Bank Philippines Skills Report that reveals that university graduates have gaps in foundational skills, such as problem-solving, critical thinking, initiative and creativity. To a lesser extent, there are also gaps in job-specific technical skills (Buendia, 2011).

To conclude however that the differences are indeed significant, the researcher subjected the data to a series of Welch-Satterthwaite t-tests. In the proceeding section, the tests of difference are conducted for each component of the graduating students' profile. This will be followed by the Chi Square test to determine the relationship between these differences and the graduating students' ethnicity and sex.

A. Field of Study

The data from Table 3 reveal that there is a significant difference between the required and perceived work readiness

levels for the field of Business Management, further suggesting that there is a considerable gap between the skills set required by employers and the skills set possessed by graduating students. The opposite is true for the field of Computer Studies where no significant difference was noted.

Table 3 Difference between Required and Perceived WRLs by Field of Study

FIELD OF STUDY	BUSINESS MANAGEMENT			COMPUTER STUDIES		
	t value	p-value	Remark	t value	p-value	Remark
Difference in required and perceived work readiness levels	-2.5058	0.0226	Significant	-1.3914	0.2053	Not Significant

*Significant at p-value < 0.05

Skills gaps have been observed across many countries, industries and fields of occupation as well. Hence, it is not surprising that the results above are consistent with the expected skills gap. The findings are partially consistent with the Philippine Skills Report, 2012 Global Talent Shortage report and the Philippine Education Sector Assessment Project where it was claimed that the quality of training and skills acquisition of graduates have deteriorated, thus leading to a skills gap. Several studies have been conducted to assess the job readiness of business graduates. For instance, it was reported that while business graduates possess high ratings in certain skills, they still face gaps in non technical aspects such as social, leadership and communication skills (Chapman & Jackson, 2010). On the other hand, it was a surprise to note that the Computer Studies field did not register any significant differences in light of the global skills gap.

B. Ethnicity

For ethnicity, Table 4 shows that there are significant differences between the required and perceived work readiness levels of Visayan and Moro graduating students from the field of Business Management. This is not true however for the case of Visayan and Moro graduating students from the field of Computer Studies, where no significant differences were noted. We can thus conclude that there are considerable gaps in the required and perceived skills set of Visayan and Moro graduating students from the field of Business Management.

Table 4 Difference between Required and Perceived WRLs by Ethnicity

ETHNICITY	VISAYAN			MORO		
	t value	p-value	Remark	t value	p-value	Remark
Difference in work readiness levels of Business Management graduating students	-2.4518	0.0249	Significant	2.3149	0.0275	Significant
Difference in work readiness levels of Business Management graduating students	1.4075	0.2006	Not Significant	1.0873	0.3011	Not Significant

*Significant at p-value < 0.05

C. Sex

Finally, a test of difference between required and perceived work readiness levels by sex presented in Table 5 shows significant differences noted for male and female graduating students from the field of Business Management. On the other hand, there were no significant differences noted for the male and female graduating students from the field of Computer Studies.

Table 5 Difference between Required and Perceived WRLs by Sex

SEX	MALE			FEMALE		
	t value	p-value	Remark	t value	p-value	Remark
Difference in work readiness levels of Business Management graduating students	2.6125	0.0157	Significant	2.382	0.0291	Significant
Difference in work readiness levels of Business Management graduating students	1.1558	0.2834	Not Significant	1.6325	0.1437	Not Significant

*Significant at p-value < 0.05

It appears that the overall significant difference computed for the field of Business Management has an impact on the differences noted by ethnicity and sex. This explains why significant differences among Visayan and Moro, male and female graduating students were noted for the Business Management field but not for Computer Studies, since the latter did not register an overall significant difference.

D. Relationship to Ethnicity and Sex

To determine if the differences noted in the previous section are indeed related to the graduating students' ethnicity and sex, chi square tests were conducted on the data. The findings can be seen in the succeeding tables.

Table 6 Test of Relationship between Ethnicity and Difference in WRLs

Ethnicity	Level of Work Readiness with respect to the Level of Difference				Total
	Poor	Fair	Good	Excellent	
Visayan	0	135	106	2	243
Moro	1	15	13	0	29
Total	1	150	119	2	272
Chi-Square Value = 8.696 p-value = 0.034	Significant		Contingency Coefficient = 0.176 p-value = 0.034		Significant

*Significant at p-value < 0.05

Table 6 above shows the frequency of Visayan and Moro graduating students with differences in work readiness levels under the categories poor, fair, good and excellent. Accordingly, most of the graduating students' levels are concentrated in the fair and good categories, with 135 and 15 Visayan and Moro respondents respectively in the fair category, and 106 and 13 Visayan and Moro respondents

respectively in the good category. On the extreme, there was 1 Moro respondent who scored poor and 2 Visayan respondents who scored excellent.

The table displays a significant association between the ethnicity of the graduating students and the differences in required and perceived work readiness levels. This implies that Visayan graduating students tend to have higher work readiness levels and thus smaller skills gaps than Moro graduating students of MSU-IIT.

This major finding is consistent with the results of two separate studies where racial background of the respondents has proven to be a factor in skills gap. In one study, it was reported that black students had significant skills gaps in functional literacy, intelligence, employability and trainability in comparison to white students (Gottfredson, 2000), while in another, Asians (students) showed an advantage over White in teacher-rated non-cognitive skills (Goldammer, 2012).

Table 7 Test of Relationship between Sex and Difference in WRLs

Sex	Level of Work Readiness with respect to the Level of Difference				Total
	Poor	Fair	Good	Excellent	
Male	1	59	44	2	106
Female	0	91	75	0	166
Total	1	150	119	2	272
Chi-Square Value = 4.906 p-value = 0.179	Not Significant		Contingency Coefficient = 0.133 p-value = 0.179		Not Significant

*Significant at p-value < 0.05

Similarly, Table 7 above shows the frequency of male and female graduating students with differences in work readiness levels under the same categorical classification used in the previous table. It also shows that most of the graduating students' levels are concentrated in the fair and good category, with 59 and 91 male and female respondents respectively in the fair category, and 44 and 75 male and female respondents respectively in the good category. In addition, there was 1 male respondent in the poor category and 2 male respondents in the excellent category.

The main finding however is that no significant association could be established between the sex of the graduating students and the differences in required and perceived work readiness levels. This implies that male and female graduating students of MSU-IIT have almost the same work readiness and skills gap levels. Thus, gender and difference in work readiness levels are independent and therefore unrelated to the skills gap in this case. Moreover, the results are inconsistent with another landmark study where white and black males showed lower average cognitive and non-cognitive skills than their female counterparts, and gender differences in non-cognitive skills are substantially larger than in cognitive ones (Aucejo, 2013).

IV. CONCLUSIONS

The results of this study reveal that gaps exist for graduating students of both fields of study, Business Management and Computer Studies, of MSU-IIT. However, the t-tests

conducted show that Business Management graduating students have significant differences between their required and perceived work readiness levels. The ratings under the four components of the work readiness scale show that Business Management graduating students are mostly lacking in workplace skills associated with personal characteristics and work competence. In addition, the study has established a relationship between ethnicity and the difference in required and perceived work readiness levels of graduating students. The results reveal that on the average MSU-IIT Moro graduating students from both fields tend to have lower work readiness levels and consequently larger skills gaps than Visayan graduating students. This finding is highly significant because it impacts the employability chances of Moro graduating students. Likewise, it should compel educators and schools to be sensitive to the racial skills gap among, and diversify their educational and training strategies to address the skills needs of different ethnicities. On the other hand, no relationship could be established between sex of the graduating student and his or her work readiness and skills gap levels.

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