Students' Adaptive and Contextual Skills in the Food Technology Program: A Premise for a Sustainable Industrial System in the Tertiary Education

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Abstract: This study pursued to determine the socio-demographic profile of employer/manager of food/hotel industries in Zamboanga City in terms of age, length of service and educational attainment. It also sought to determine the level of adaptive and contextual of skills of food technology graduates of Bachelor of Science in Industrial Technology major in Food Technology in terms of the adaptive and contextual skills. This utilized the descriptive quantitative-qualitative design to establish the level of adaptive and contextual skills of food technology graduates of Zamboanga City State Polytechnic College. Data revealed that the level of adaptive and contextual skills of the food technology graduates was "Highly Satisfied" which implicates that the food technology graduates were performing very well at their workplace and connotes that the institution is providing competent graduates in food technology curriculum who were socially responsible and independent as well as met the demands of their respective employers in their workplace. Respondent's profile was not considered predictors in their level of satisfaction on the adaptive and contextual skills of the BSIT- FT graduates.

Keywords: BSIT Food Technology Graduates, Adaptive Skill, Contextual Skill, Employer/Manager, Age, Educational Attainment, Length of Service, Program Enhancement

Introduction

Food is necessary for daily existence. The importance of eating habits for overall health and wellbeing is becoming more widely recognized. The global economy is searching for novel approaches to enhance the value of unprocessed materials. Excellent pay, global job opportunities, and a growing need for graduates with training in food technology are the results of all of this. Students will gain knowledge not only in the classroom but also in hands-on laboratory and workshop settings that emphasize real-world issues and their solutions. In industrial-standard food processing facilities, students will gain practical experience.

Teachers play a vital role in higher education institutions in producing quality graduates who are job ready for respective industries. The Zamboanga City State Polytechnic College is offering the Bachelor of Science in Industrial Technology major in Food Technology (BSIT-FT), wherein the vision of the institution is to provide globally competitive human resources with this, the graduates of the program connotes that the institution is mandated to prepare their graduates in the world of work with competent skills. On the other hand, efficiency of an educational program offered by an educational institution can be measured through the competencies of its graduates,

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the knowledge and skills of the graduates can be applied in the work environment and the knowledge and skills that the graduates possessed can be determined through the feedback from employers of the graduates in their work.

Hence, the aftermaths of any educational programs can be best measured in terms of how well the graduates applied their acquired competencies in the real workplace. In this connection, to prove this venture, it is a must to follow-up the updates on the employment of the graduates of the BSIT-FT program in order to gathered vital information for the institution to capitalize on its strength and identify its area of improvement for further improvement of the training and enhancement of the curriculum to produce quality of graduates on the neighboring industries.

In lieu with the aforementioned, the employability of graduates from an institution is very important concern of HEI's. Evidences indicate a growing apprehension to evaluate the performance of graduates, the relevance of the curriculum offered, and the satisfaction of alumni with their academic preparations through tracer studies of graduates (Antiojo, L.P., 2018). Furthermore, Valenzuela, et. al. (2012) asserted that graduate's employability is a function of a range of individual characteristics. Employability attributes include significant manageable skills such as adaptability, intellectual skills, teamwork and basic interpersonal skills and their usefulness to the graduates in their jobs. Furthermore, satisfaction is the perceived level of pleasure and contentment derived from individual performance. Satisfaction, in addition to values

and competence, is the motivating force for occupational behaviour.

Moreover, it was observed that the objective of every State Universities and Colleges in the Philippines is to produce graduates that are competent in the field chosen and an expectation to land a job, whereas industries also are expecting rigid training of skills on the graduates from an institution for their employability. However, due to the issues and concerns in a particular program offered in government higher education institutions like insufficient instructional materials and equipment, industries and companies are facing problems in hiring a new employee that will fit the job description needed by industry.

In line with this, the focused of this research study is to specifically determine how the graduates of Bachelor of Science in Industrial Technology major in Food Technology (BSIT-FT) from the year 2015-2019, performed in the real world of work on the point of view of employers/ managers and how satisfied they are on contextual and adaptive skills performance of the graduates of Zamboanga City State Polytechnic College.

Related Literature and Studies

The Work of a Food Technologist

A food technologist's duties can vary from creating recipes and modifying production procedures to overseeing food safety and legality and developing and refining the manufacturing and development processes as well as the recipes of food and drink items, according to the Prospects (2023) article. Creating safe, well-made products that adhere to the highest standards is the primary goal of food technologists. In order to create new concepts and recipes, they can also work with current and recently found ingredients.

Product development teams frequently collaborate closely with them to generate factory-ready recipes based on development kitchen samples. They may modify food to create products such as fat-free items and ready meals. It will be crucial to stay current with regulations governing food production that are often changing.

Their tasks may vary depending on where they work, which can include food and drink manufacturing companies, universities, research associations, retailers and local authorities. The following are the skills that Food technologists must also possess:

◆ a genuine interest in science and how it is applied to food and cookery

◆ high standards of cleanliness and the ability to adhere to strict hygiene rules

◆ excellent attention to detail

◆ strong written and verbal communication skills

◆ leadership qualities

◆ people and teamworking skills

◆ a flexible approach to working

◆ numeracy and problem-solving skills

◆ good organisational ability and time-management skills

◆ an awareness of the consumer market.

Job Performance

For work and organizational psychological researchers, comprehending the factors that precede job performance has always been a fundamental challenge because it directly affects organizational efficiency and offers vital information that is helpful in selecting employees as well as in programs for career development and vocational training (Visweswaran & Ones, 2000). Understanding the processes and procedures underlying the many performance indicators is essential to provide a broad knowledge foundation for such organizational goals across diverse work contexts, as job performance is a multifaceted phenomenon.

According to Motowidlo (2003), job performance is the efficiency with which employee actions support organizational objectives. There was no correlation between the employee's self-ranking of his own performance and his views about his duties and obligations (Lawler & Hall, 1970). Researchers that seek ways to improve job performance describe job importance as a subjective assessment and interpersonal interactions (Griffin, 1983).

An organization's performance is largely determined by the work that its personnel do. Previous research has demonstrated that employees who are not matched appropriately do poorly on the job. Due to research showing that those with strong person-job fit have favorable work outcomes, person-organization fit can be a reasonable predictor of job performance (Edwards, 1991).

Transition to a Food Science Curriculum

Many professional domains are adopting a curriculum that is focused on assessment of learning outcomes since research in the education literature shows the advantages of this kind of curriculum (Palomba and Banta 1999). An example of this is the recent adoption of an outcomes-based learning strategy by the engineering disciplines and its standardizing organization, the Accreditation Board for Engineering and Technology (ABET). The Institute of Food Technologists (IFT) has evaluated food science programs since 1977, according to Harteland & Gardner (2003), using minimal standards created by industry professionals. The fact that only students enrolled in programs with IFT approval are qualified for IFT

scholarships lends some weight to IFT approval. The IFT policies for program evaluation were established in 2001.

Prior to 2001, a series of courses with set content material were prescribed and only departments that met these minimum course requirements were approved. A program of student learning assessment based on predetermined outcomes is currently mandated by the IFT Education Standards. According to IFT, the curriculum must now: (1) meet a specific set of core competencies, rather than a predetermined set of courses; (2) write specific learning outcomes, or statements of desired learning that can be measured with the use of an assessment tool; (3) use appropriate assessment tools to measure student learning, both for individual classes and the curriculum as a whole; and (4) implement a well-thought-out curriculum reform process based on the assessment data.

In this context, assessment tools refer to a broad range of metrics that enable the teacher to grade pupils according to their level of proficiency on particular assignments. Every institution should base its transition to learning outcome assessment on a number of variables. The demands of the pupils at that specific institution, the resources available, and the instructors' background in educational principles are a few examples. The experience of the instructors in terms of education concepts, the resources available, and the demands of the students at that particular institution, while at other institutions the students may be largely prepared for industrial positions immediately following receipt of the BS degree. Most pupils in schools could end up with Ph.D.s and positions in research and

Programs must be mindful of their students' professional outcomes and needs, even though individual needs may differ. Program requirements must be taken into consideration when designing the course material and delivery method. To ensure that program needs are met, assessments must be used to give faculty the feedback they need. According to Madaus (1988), modifications to evaluation usually lead to modifications in instruction. There will be new forms of instruction, frequently stressing active student learning, if assessments are made to measure both topic knowledge and student performance in key ability areas (Glatthorn 1999).

Adaptive Performance

Adaptive Performance has been frequently described as a set of skills or behaviors that lead a person to maintain performance during unexpected changes; however AP has been found to have both proactive aspects (i.e. anticipatory actions regarding perceived future change) and reactive components (i.e. modifying one's behavior due to change; Griffin & Hesketh, 2003; Jundt et al., 2015). Therefore, although you can find many different definitions of AP throughout the literature, for the purposes of this paper, we

follow Jundt et al.'s (2015) definition of AP: "task-performance-directed behaviors individuals enact in response to or anticipation of changes relevant to job-related tasks" 4 (pp. 2-3). Just as there has been no consensus on a standard definition of AP in the literature, the same can be said regarding a prevailing model of the underlying dimensions of AP.

On the other hand, the amount of research conducted to date regarding the topic of AP is sparse. To make matters more problematic, the limited number of studies that have been conducted on AP have not found consistent results. The AP literature in general lacks a uniform definition, representative model of the construct, and concrete findings on the various antecedents and consequences of AP. According to a review of the AP literature by Jundt, Shoss and Huang (2015), researchers have assessed AP in many different ways, across various domains, and use several different terms when referring to AP and its related concepts, which has left the AP literature fragmented. Some of the concepts frequently used when discussing AP include adaptive performance, adaptability, adaptation, adaptive expertise, adaptive transfer, and performance adaptation. Processes such as problem solving, flexibility and coping, are often used as synonyms of AP, as well, and although these processes may play a role in AP in certain situations, they do not appropriately represent the overarching conceptualization of AP (Jundt et al., 2015).

In line with the aforementioned Baard, Rench and Kozlowski (2014) discussed this fragmentation of the AP literature, and presented two main domains that AP research typically falls within: "domain-general" and "domain-specific". Within the domain-general literature, adaptive abilities (i.e. individual differences) are viewed as relatively stable traits/performance constructs. These adaptive abilities are also thought to be generalizable across various jobs (Baard et al., 2014). Research within this domain has focused on selection and performance management topics, typically using field settings and ratings of success in changing or new conditions to assess AP (Baard et al., 2014; Jundt et al., 2015).

The domain-specific approach on the other hand, views adaptation as a capability that can be learned and applied within specific contexts (Baard et al., 2014). Research concerning the domain-specific approach is typically aimed towards training and development areas, and is usually performed in laboratory settings where AP is assessed by an individual's performance on a learned task after shifts in difficulty and/or complexity (Baard et al., 2014; Jundt et al., 2015). Although Baard et al. (2014) suggested that there may be value in having multiple AP literatures (domain-general and domain-specific), many researchers feel that in order to find meaningful conclusions regarding AP, we should not segregate

findings within different domains, but rather take into consideration all of the findings across the various study contexts, methods, and goals (Chan, 2000; Jundt et al. 2015).

Research Question

What is the level of adaptive and contextual skills performance of graduates in Bachelor of Science in Industrial Technology Major in Food Technology (BSIT-FT) as assessed by employer/manager?

Methodology

This study utilized the descriptive quantitative-qualitative research design. This research design was considered appropriate for the fact that the research study was aimed in determining the level of satisfaction of employers towards the adaptive and contextual skill of food technology graduates. Moreover, it also described the difference in the satisfaction of employers on the adaptive and contextual skills of food technology graduates when categorized according to the socio-demographic of employers. More so, the study also focused on what were the problems/ gaps the college (CET) that needs to be addressed in order to develop the adaptive and contextual skills of the Food Technology Graduates.Furthermore, it is deemed as quantitative research for it used numerical data to analyze the problem which were obtained from the employers of food technology graduates using a self-made survey questionnaire.

Results and Discussions

Table 1 shows that based on the data that was collectively gathered from the respondents it reveals that respondents self-rated the statement that the employee is trainable and willing to learn with a mean of 3.75 as highly satisfied. It has also disclosed that the employee know how to prioritise, work efficiently, productively and the employee depended on to work assignments as highly satisfied with a mean of 3.60 respectively.

Furthermore, it shows that the employee have a good communication skill towards client and could also do written reports with a mean of 3.5 described as highly satisfied. Also, statements that the employee know how to identifies new approaches to problems and respond well to change were both described as highly satisfied with a mean 3.42 and 3.57 respectively.

For that reason, findings disclosed that the respondent from different food industries were highly satisfied on the performance of food technology graduates of Zamboanga City State Polytechnic College in terms of adaptive skills with an over-all-mean of 3.49. It further denotes that the food technology graduates were socially responsible and independent as well as meet the demands of their respective employers in their workplace. Additionally, as reputes to research findings, study also provide relevant information to the Higher Education Institution which regards to food technology graduates level of adaptive skill performance in the workplace which also have a positive impact overall in the performance of the University.

Table 1. Level of Adaptive Skills of the BSIT- Food Technoloy Graduates as Assessed by Respondents

Adaptive Skills	Mean	Descriptive Rating
1. **Communication** (the ability of employee to written reports and Oral communication to clients).	3.50	Highly Satisfied
2. **Equipment and Technology** (the ability of employee to use a certain equipment or technology related to job).	3.53	Highly Satisfied
3. **Teamwork** (interpersonal relationship of employee).	3.53	Highly Satisfied
4. **Problem solving** (the ability of employee to take logical and analytical approach in solving the problem related to job).	3.28	Highly Satisfied
5. **Customer service** (the ability of employee to deal passionately to the client).	3.60	Highly Satisfied
6. **Computer Literacy** (the ability of employee to perform or operate basic computer software and hardware)	3.17	Average Satisfied
7. **Computation** (the ability of employee to perform basic mathematics).	3.39	Highly Satisfied

8. **Organisation** (the ability of employee to prioritise, work efficiently, productively and manage time well).	3.60	*Highly Satisfied*
9. **Leadership** (the ability of employee to motivate co-employee or colleagues that may work for them).	3.42	*Highly Satisfied*
10. **Work under pressure** (the ability of employee to keep calm in a crisis and not becoming overwhelmed or stressed).	3.50	*Highly Satisfied*
11. **Integrity** (the employee ability to understand and applies ethical principles to decisions)	3.46	*Highly Satisfied*
12. **Empathy** (the employee ability to understand the situation, feelings, and motives of others).	3.57	*Highly Satisfied*
13. **Reliability** (the employee ability to be depended on to work assignments).	3.60	*Highly Satisfied*
14. **Self-discipline** (the employee ability to control of personal behaviour).	3.39	*Highly Satisfied*
15. **Creativity** (the employee ability to identifies new approaches to problems)	3.42	*Highly Satisfied*
16. **Flexibility** (the employee ability to respond well to change).	3.57	*Highly Satisfied*
17. Willingness to learn.	3.75	*Highly Satisfied*
18. Positive work attitude	3.57	*Highly Satisfied*
19. Accepts responsibility for consequences of actions.	3.53	*Highly Satisfied*
20. Understand and takes direction for work assignment.	3.39	*Highly Satisfied*
Over-all Mean	**3.49**	**Highly Satisfied**

Legend: *3.25 - 4.00 – Highly Satisfied; 2.50 - 3.24 – Average Satisfied; 1.75 - 2.49 –Satisfied and 1.0 – 1.74 - Not Satisfied*

This study established the findings of Calarco, H.N (2016), "Measuring the Relationship between Adaptive Performance and Job Satisfaction" stated The findings of this study suggest that Individual Adaptability and Adaptive Performance on the job (i.e. how well they perform in work situations requiring Adaptive Performance) are related. Findings also suggest that certain dimensions of Adaptive Performance can predict Job Satisfaction when there is a good fit between a person's Individual Adaptability and the Adaptive Performance Requirements on the job. In this connection to the adaptive skills of food technology graduates as assessed by managers from different food industries which highly satisfied it denotes that food technology graduates performs well in the workplace requiring adaptive performance of food technology graduates and meet the adaptive performance of food industries as to managers' evaluation.

Conclusion and Recommendation

This study concludes that the level of adaptive and contextual skills of the food technology graduates was "Highly Satisfied" which implicates that the food technology graduates were performing very well at their workplace and connotes that the institution is providing competent graduates in food technology curriculum who were socially responsible and independent as well as met the demands of their respective employers in their workplace. Respondent's profile was not considered predictors in their level of satisfaction on the adaptive and contextual skills of the BSIT- FT graduates. Hence, it is recommended that college administrators shall maintain active and strong collaboration with the industries to craft interventions focusing on the skill set and total attributes of the graduates that needs to be developed to refine and prepare them as they leave the college and seek for employment.

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