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INTEGRATING TECHNOLOGY IN ACCOUNTANCY: UPSKILLING, UNDERSKILLING AND RESKILLING

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ABSTRACT

The aim of this research is to address the integration of technology in terms of upskilling, reskilling, and under-skilling among accountancy students of Colegio de la Purisima Concepcion. The study's dilemma emerged from concerns involving the student's competence and existing skill set when faced with technology modernization. To gather information on the current condition of the problems under consideration, the study used a descriptive and correlational research approaches utilizing a validated and pilot-tested survey questionnaire to a randomly selected 175 accountancy students. The major findings show that students perceive reskilling as a necessity alongside under-skilling and upskilling in order to navigate the technology advancements in the evolving industry. Additionally few approaches are also highlighted such as participation on professional development activities and investment on technology. Overall, the research determined that while accountancy students of Colegio de la Purisima Concepcion have basic technology integration skills, there is still room for improvement, notably on utilizing advanced software and platform, the availability of equipment and instructor. The study provides insights into the hindrance that accountancy students confront, while giving the institution the idea of current curriculum modifications to give students the competitive advantage in the job market and equipping them with necessary skills to strive in the industry.

Keywords: *Technology integration, accountancy, upskilling, reskilling, underskilling*

1. Introduction

The rapid advancement of technology is significantly impacting the students, including the accounting field. Students from accounting programs and accountants now require skill sets beyond traditional accounting practices, encompassing data analysis, cloud-based accounting software, big data, spreadsheets, and artificial intelligence (AI). However, concerns exist regarding a potential gap between the evolving technological demands and the skill sets of students in practicing accounting. While training exists, some students struggle to cope with advanced software and artificial intelligence due to workload, cost, limited resources, and outdated views of its complexity. This widens the technology integration skills at an alarming rate, as the job market for technologically proficient accountants continues to expand.

The accountant's necessity for upskilling and reskilling in terms of technology integration skills in keeping pace with rapid technological advancements should be further explored, taking into consideration other relevant aspects. According to Hogianto (2023), the accountants who navigate the Industrial Revolution 4.0 must also attain this fundamental proficiency in critical thinking, data literacy, analytical skills, and soft skills, encompassing both interpersonal and intrapersonal abilities, to thrive in the new era.

The dynamic nature of technology in this field presents both opportunities and challenges. The individual conducting this research seeks to justify this endeavor by linking the identified problems to their students' life as an accountancy student. Recognizing the necessity for continuous learning and adaptation, the study aims to address the evolving skill sets demanded by the digital transformation of accounting. By delving into the gaps between current skill sets and those required for future success, the researchers endeavor to contribute valuable insight to inform not only students but also professional bodies. The overarching goal is to equip the researcher, as accountancy student, with the necessary knowledge to navigate the changing landscape and actively participate in the development of effective upskilling, underskilling and reskilling strategy within their organization and the broader profession.

This study will look into technology integration in accountancy BSA students. The study addressed the following research questions: (1) What is the level of technology integration as a whole and in term of upskilling, underskilling and reskilling? (2) Is there a significant difference in the level of technology integration in terms of upskilling when respondents are grouped according to sex, age, and year level? (3) Is there a significant difference in the level of technology integration in terms of underskilling when respondents are grouped according to sex, age, and year level? (4)Is there a significant difference in the level of technology integration in terms of reskilling when respondents are grouped according to sex, age, and year level?

The following are the hypotheses of the Study: (1) There is no significant difference in the level of technology integration in terms of upskilling when respondents are grouped according to sex, age, and year level. (2) There is no significant difference in the level of technology integration in terms of underskilling when respondents are grouped according to sex, age, and year level. (3) There is no significant difference in the level of technology integration in terms of reskilling when respondents are grouped according to sex, age, and year level.

Conceptual Framework

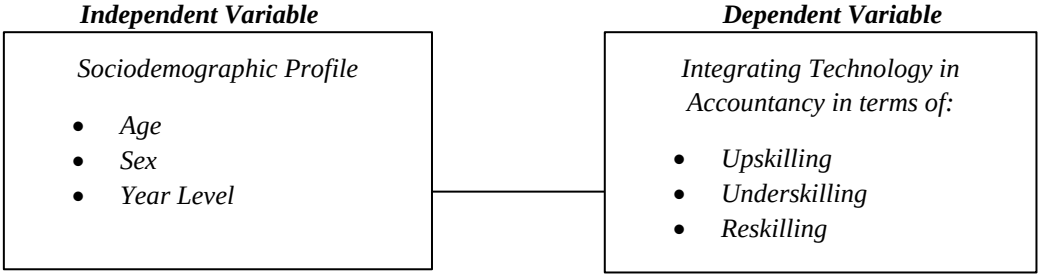

Figure 1. Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study. It consists of two variables, Sociodemographic profile in terms of sex, age, and year level as an independent variable and Integrating Technology in Accountancy in terms of upskilling, underskilling and reskilling as the dependent variable.

The sociodemographic profile in terms of sex, age, and year level as an independent variable pertains to how integrating technology in the classroom affects accounting students differently, based on their sex, age, and year level. This could focus on factors like access to training, comfort with technology, and openness to learning new skills. The aim is to identify advantages and disadvantages, or roadblocks, that hinder equal access to and use of technology among accounting students and develop strategies for inclusive integration.

Another variable, upskilling, underskilling, and reskilling, is a dependent variable. Upskilling signifies the process of enhancing existing skills to address evolving demands in a particular field. Reskilling refers to gaining entirely new skills and knowledge to transition to a different role or adapt to substantial workplace changes. Underskilling denotes a deficit in essential skills for a specific job function due to inadequate training, outdated knowledge, or limited opportunities to keep up with advancements.

2. Literature Review

Integrating Technology. Integrating technology refers to enhancing student performances through utilizing technological tools and resources as part of the learning process (Ahmad & Hamad, 2020). The study of

Andiola, et al. (2020), and Kroon et al. (2021) shows similar ideas on how revision of standards and technological transformation are reshaping both accounting education and profession.

Upskilling. Upskilling refers to a long-term commitment that provides employees with essential knowledge, skills, and competencies aimed at career progression (Vroman & Danko, 2022). The researcher Jackson et al. (2020) emphasizes the significance of preparing students for their future work in the face of technological advancement while Davies et al. (2018) centers on the idea that upskilling might serve as a pathway of prosperity in terms of achieving economic growth by young individuals through the efficient use of technology. On the other hand, Montgomery (2022), states that skills taught in accountancy may need to be altered as they adapt new digital tools to remain on track with fast technological advancements.

Reskilling. Reskilling refers to the process of learning new skills necessary in order to adapt to changes of a job responsibility, especially when that involves transitioning to more technical areas, a challenging prospect that demands strategic planning (Emeritus.org, 2022). The researchers Olaitan et al. (2021) focused on developing other skills aside from technology integration skills and Bendal et al. (2020) emphasize to focused on enriching machine learning techniques.

Underskilling. Underskilling refers to where people report requiring more training to fulfill their job role (Rafferty, 2019). The researcher Sithole (2015) concluded on the modifications of current curriculum while Berikol et al. (2021) suggests the acquisition of digital technologies. Tomaro (2018) highlighted the importance of becoming computer literate amidst the tech breakthroughs.

3. Research Method

This study utilized the descriptive and correlational designs in treating the quantitative data. The identified one hundred seventy-five (175) respondents out of the three hundred ten (310) accountancy students were randomly selected. The sample size was taken from the total population with a margin of error set at 0.05 using Taro Yamane's (1967) formula. The respondents were proportionally allocated using Bourley's Proportional Allocation Formula (Achonu et., al). In this study the researchers created a self-made questionnaire that was used as a data collection instrument for the quantitative data. This survey questionnaire was composed of two parts. Part I. covered the socio demographic profile of the respondents such as sex, age, and year level. Part II was composed of questions in relation to Integrating Technology in Accountancy in terms of upskilling, underskilling and reskilling, focusing on attaining the relationship between the variables. A researcher-made questionnaire, frequency count, percentage, mean, t-test, and Pearson r correlation were used in the collection and analysis of data. The research instrument consisted of thirty (30)-item liker-type questions clustered into three (3) components, ten (10) questions for printed upskilling, ten (10) questions for underskilling, and ten (10) questions for reskilling with one (1) as strongly disagree, two (2) as disagree, three (3) as neutral, four (4) as agree, and five (5) as strongly agree.

Data Gathering Procedure

As soon as the questionnaire's validity and reliability are confirmed through the research instrument and reliability testing certificate, the data collection process started. When the approved questionnaire was prepared, the researchers provided a letter requesting permission from the dean of the College of Business, Management and Accountancy to collect data from students enrolled in the Bachelor of Science in Accountancy program. After receiving permission, the researcher will distribute the survey questionnaire by year level during their vacant time. Informed consent was obtained from every respondent before administering the survey questionnaire. Carefully check for missing items, and ask respondents to complete all the questions. To prevent or minimize bias, the respondents were appreciated for their participation in a data gathering process conducted solely by the researcher.

Data Analysis and Interpretation

After the questionnaires were answered, the data gathered were analyzed using statistical tools namely: frequency, percentage, mean, and standard deviation. Researchers will use Excel spreadsheet software to consolidate the data gathered from respondents. The socio-demographic profile of respondents, encompassing variables such as age, sex, and year level was elucidated through the application of frequency counts and percentages. To identify significant differences, the t-test and analysis of variance (ANOVA) were employed, specifically in addressing the integration of technology in terms of upskilling, reskilling, and underskilling among accountancy students. These analyses were conducted by categorizing respondents based on socio-demographic factors including age sex,and year level. A significance level of alpha 0.05 was adopted for correlational statistics.

4. Results and Discussion

Level of Integrating Technology as a Whole and in terms of upskilling, reskilling and underskilling

The level of Integrating technology in accountancy as a whole and in terms of upskilling, reskilling and underskilling is shown in Table 1.

Indicators	Mean	Verbal Interpretation
Reskilling	4.19	High
Upskilling	4.17	High
Underskilling	4.12	High
Grand Mean	4.16	High

Legend: 4.21-5.00 = very high; 3.41-4.20 = high; 2.61-3.40 = moderate;1.81-2.20 = low; 1.00-1.80 = very low.

Note: Components are presented from highest to lowest.

An intriguing find emerged from examining all 175 responses related to upskilling, reskilling, and underskilling presented in Table 2. The overall mean when analyzing the components, reskilling emerged with the highest mean score (4.17), while underskilling received the lowest mean score (4.12). This suggests a slightly stronger student perception of integrating technology for reskilling compared to underskilling.

The preference for reskilling among Bachelor of Science in Accountancy (BSA) students likely arises from the opportunity to acquire entirely new skill sets. These new skills could potentially open doors to new career paths or specializations within the accounting field. From the students' perspective, reskilling may hold greater relevance to their future goals compared to simply building upon existing skills (upskilling) or addressing specific skill deficiencies (underskilling). This supports the study by Olaitan and Mavuso (2022) that perceives reskilling as a necessity for students to increase their job prospects and highlight other abilities such as interpersonal skills, resourcefulness, and teamwork. Additionally, Bendal, et al. (2020) also supported reskilling to improve students' academic performance and professional development.

Upskilling

Presentation of Integrating technology in accountancy in terms of Upskilling is presented in Table 1a.

Statements	Mean	Verbal Interpretation
I use technology integration to enhance my learning experience.	4.59	Very High
I apply theoretical knowledge that I learned in my exposure to any academic engagement.	4.26	Very High
I am open to part time roles to apply my accounting practices.	4.25	Very High
I utilize any software for continuous learning despite their complexities.	4.23	Very High

I'm committed to continuously improving my Bachelor of Science in Accountancy skill set by reading research based materials.	4.23	Very High
I attend webinars to stay up-to-date on accounting best practices.	4.11	High
I feel confident that my education is providing me with the technological skills necessary for the accounting profession.	4.09	High
I take the initiative to engage myself with accounting professionals to help me enhance my current skill set.	4.05	High
I invest in technology software for career advancement.	4.00	High
I experiment with different accounting software to enrich my current skill.	3.94	High
Grand Mean	**4.17**	**High**

Legend: 4.21-5.00 = very high; 3.41-4.20 = high; 2.61-3.40 = moderate;1.81-2.20 = low; 1.00-1.80 = very low.

Note: Components are presented from highest to lowest.

Table 1a presents data on the integration of technology in accountancy, particularly regarding upskilling. The overall mean score of 4.17, with a corresponding verbal interpretation of "High," indicates a positive student perception of the value of technology integration for enhancing their upskilling in accountancy.

Analysis of the individual statements within Table 1a shows key insights. The statement with the highest mean score (4.59) is " I use technology integration to enhance my learning experience with corresponding verbal interpretation of "Very High", indicating a strong student perception of its effectiveness in upskilling. Statement 1 implies that technology goes beyond simply teaching specific software programs, potentially creating a more engaging and interactive learning environment. Conversely, the statement with the lowest mean score (3.94) is " I experiment with different accounting software to enrich my current skill." with the corresponding verbal interpretation of "High". This suggests that students value the broader learning experience fostered by technology integration more than simply using various accounting software programs. These findings align with the conclusions drawn by Montgomery (2022) regarding the impact of technology integration on accounting students emphasizing the importance of continuous learning and staying updated on emerging technologies to stay relevant and competitive in the accounting field. Although students do not exercise much, the need to experiment with various accounting software can be a result of other opportunities such as participation in workshops and internship programs. Upskilling is an important aspect that boosts student's confidence in their abilities by equipping them with the necessary knowledge and skills towards navigating technology integration

Underskilling

Presentation of Integrating Technology in Accountancy in terms of Underskilling is presented in Table 1b.

Statements	Mean	Verbal Interpretation
I regularly use online learning platforms like Coursera which provides a range of accounting technology courses to improve my accounting skills.	4.45	Very High
I engage myself to free online tutorial which are valuable resources for learning specific software programs to improve my skills.	4.38	Very High
I see a gap in my skills when faced with real scenarios in accounting.	4.22	Very High
I see to it that I can use technology to improve my accounting proficiencies for my career growth.	4.18	High

I participate in challenges that showcase my ability to solve, despite being underskilled in my field.	4.17	High
I actively seek out online workshop specifically to address my shortcoming when it comes to using technology.	4.15	High
I participate in free webinars to know about new software's relevant in accountancy.	4.13	High
I enhance my skills through CPD.	4.09	High
I acquaint myself very well with popular accounting programs.	4.06	High
I use technology platforms for financial analysis to improve proficiency	4.03	High
Grand Mean	**4.19**	**High**

Legend: 4.21-5.00 = very high; 3.41-4.20 = high; 2.61-3.40 = moderate;1.81-2.20 = low; 1.00-1.80 = very low.

Note: Components are presented from highest to lowest.

Table 1b focuses on integration of technology, particularly regarding underskilling among BSA students. The overall mean score of 4.19, with a verbal interpretation of "High," suggests a positive student perception of how integrating technology addresses underskilling in accountancy.

Assessing the individual statements within Table 1b shows important insights. Statements 1 through 3 received consistently very high ratings (ranging from 4.22 to 4.45) with corresponding verbal interpretations of "Very High". Statement 1 implies that students consider online learning platforms beneficial in boosting their accounting related skills rather than any other approaches. Statements 4 through 10 received consistent high ratings (ranging from 4.03 to 4.18) with corresponding verbal interpretations of "High". In Statement 10, students don't use the technology platform often to improve their proficiency for certain reasons such as lack of expertise and hesitance due to its complexities.

Students make use of different platforms to meet specific needs yet a significant challenge arises, as highlighted in the study of Sithole (2015) and Tomaro (2018), regarding the lack of availability when it comes training, equipment's, additional insight and presences of an instructor in order to access advanced platforms to address underskilling among students. Overcoming these obstacles erases limitations and uncovering student's potential for more efficient and proficient application.

Reskilling

Presentation of Integrating Technology in Accountancy in terms of Reskilling is presented in Table 1c.

Statement	Mean	Verbal Intepretation
I acquire technological skills to support my non-technical skills.	4.25	Very High
I strive to acquire proficiency in technology to give me a competitive edge in the job market.	4.22	Very High
I pursue online certifications.	4.19	High
I utilize an interactive learning platform to practice.	4.18	High
I embrace remote learning, which enables me to network with other professionals.	4.17	High
I explore additional expertise beyond acquiring technological proficiency.	4.15	High

I am actively seeking opportunities to keep up with technological changes.	4.11	High
I attended to training sessions that my institution provides on the latest accounting software and tools.	4.06	High
I am open to learning new technological skills related to accounting.	4.01	High
I have access to resources for reskilling in new accounting technologies.	3.91	High
Grand Mean	**4.12**	**High**

Legend: 4.21-5.00 = very high; 3.41-4.20 = high; 2.61-3.40 = moderate;1.81-2.20 = low; 1.00-1.80 = very low.

Note: Components are presented from highest to lowest.

The results presented in table 1c exhibits data on the integration of technology in accountancy, particularly regarding reskilling among BSA students. The overall mean score of 4.12 and a verbal interpretation of "High", signify a promising student perception of Integrating technology in Accountancy in terms of Reskilling.

Examining individual statements in Table 1c yielded significant insights. "I acquire technological skills to support my non-technical skills" (Statement 1) achieved the highest mean score (4.25) with a corresponding "Very High" verbal interpretation. This suggests a strong student belief that developing technological skills enhances, rather than replaces, their existing non-technical abilities, signifying its effectiveness in reskilling. Conversely, "I have access to resources for reskilling in new accounting technologies" (Statement 10) received the lowest mean score (3.91) with a "High" interpretation. This implies that students value developing their technological skillset itself more than simply having access to resources for learning new accounting technologies.

The results aligned with the study of Olaitan and Mavuso (2022) that recognized the relevance of other abilities aside from technical ones amidst the advancement of technology. Statement 1 suggests that acquisition of those skills are valuable in their own right but they are even more effective when combined, it enhances the students efficiency in data (technological skill) and problem - solving abilities (non -technical skills). By developing diverse set of skills, individuals become more flexible and adaptable in any field. However, not everyone has sufficient access towards resources for participating in reskilling activities due to limited finances, time constraints and technology barriers.

Difference in the level of technology integration in terms of upskilling when respondents are grouped according to sociodemographic profile is presented in Table 2a

Profile	t/f-Value	Significant Value	Probability
Sex	0.121	0.904	n.s.
Age	1.666	0.192	n.s.
Year Level	1.219	0.304	n.s.

Legend: p-value > 0.05 = not significant (n.s.); p-value < 0.05 = significant (s.)

Difference in the level of technology integration in terms of underskilling when respondents are grouped according to sociodemographic profile is presented in Table 2b.

Profile	*t/f-Value*	*Significant Value*	*Probability*
Sex	*0.383*	*0.702*	*n.s.*
Age	*1.482*	*0.230*	*n.s.*
Year Level	*0.966*	*0.410*	*n.s.*

Legend: p-value > 0.05 = not significant (n.s.); p-value < 0.05 = significant (s.)

Difference in the level of technology integration in terms of reskilling when respondents are grouped according to sociodemographic profile is presented in Table 2c.

Profile	t/f-Value	Significant Value	Probability
Sex	0.341	0.734	n.s.
Age	1.430	0.242	n.s.
Year Level	1.117	0.344	n.s.

Legend: p-value > 0.05 = not significant (n.s.); p-value < 0.05 = significant (s.)

5. Conclusion and Implications

From the findings, the following conclusions were drawn: BSA students perceive the integration of technology for reskilling, upskilling, and underskilling positively, with reskilling receiving the highest mean score, followed closely by upskilling and underskilling. Reskilling holds the most relevance for students as it aligns with the acquisition of entirely new skills, which they believe could open doors to various career opportunities. Upskilling is viewed as enhancing current competencies, and underskilling, while positively regarded, presents challenges such as students' lack of expertise and hesitance towards complex technology. The analysis also revealed that there are no significant differences in students' perceptions of technology integration for upskilling, reskilling, and underskilling when grouped by sex, age, or year level. This suggests that technology's influence on enhancing or addressing skill gaps in accountancy is consistent across these demographics.

It implies that efforts to integrate technology in accountancy education should continue to emphasize reskilling opportunities, as students see this as most impactful. However, addressing the barriers to underskilling, such as providing more accessible training resources and simplifying complex software, could further enhance the effectiveness of technology in the field. Future researchers may explore other dimensions of skill development in accountancy to deepen understanding of technology's role in shaping student capabilities.

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