Cultivating State-of-the-Art Competencies and 21st Century Skills for Hospitality Management Students: A Learning and Development Model

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Abstract

In this study desired competencies were examined in relation to the 21st century skills of Hospitality Management students. The survey results revealed that students were competent in terms of being cooperative, following instructions, getting along with others, being dependable and productive, taking initiative, and displaying workplace competencies, but less competent in the quality of their work. The students' 21st century skills were also good or manifested to a great extent in their collaboration skills, personal and workplace skills, self-direction skills, thinking and reasoning skills, and creativity and innovation skills. However, their information and communication skills were not as strong. Correlation existed between desired competencies and students' 21st century skills, revealing that those with highly-desired competencies also manifested 21st century skills. Students experienced issues regarding management of the company and confusion about their work assignments. It can be concluded that students' lack of information and communication skills influenced their quality of work, and led to concerns with the company where on-the-job training was conducted. Hence, to cultivate state-of-the art skills, a learning and development model was formulated that focused on improving their quality of work, and strengthening their information and communication skills.

Keywords: *State-of-the-art competencies, 21st century skills, learning development model*
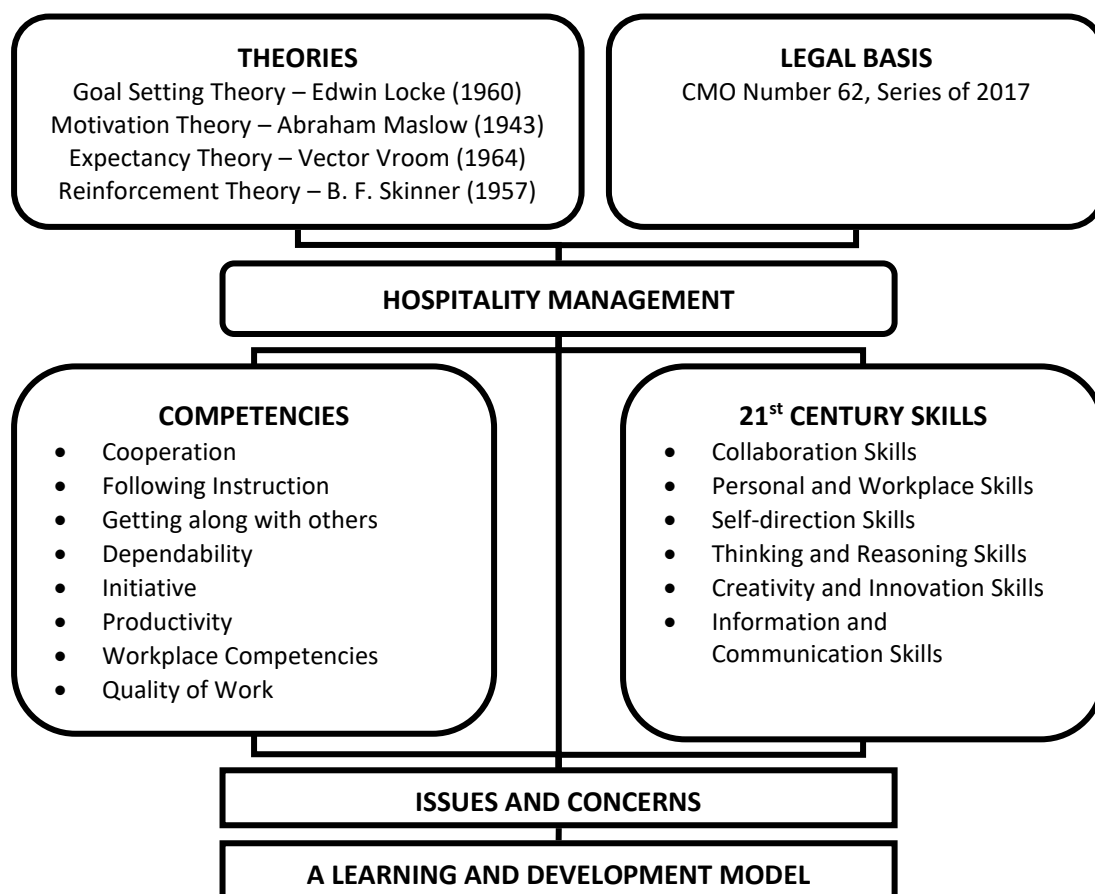
Introduction

State-of-the-art work refers to a quality of work that is done with refinement and complexity, and performed to the best or fullest extent. Quality of work in a competency means that work has reached a degree of excellence or a state-of-the-art level. To attain this goal, one's focus must be on obtaining essential knowledge, understanding, skills, and capabilities related to hospitality management, which will create a strong foundation for work. When put into practice with dedication, students can attain predetermined standards, and the desire to succeed is a sign that a state-of-the-art level has been attained. Accordingly, 21st century teaching and learning has the following skills: critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, local connections, and technology (Ravitz, 2014). Students must be well-equipped since industrial establishments demand practical skills and experience, or preferably, both merged together. This facilitates higher graduate employment levels and more rapid career advancement.

It was observed that not all hospitality management students have adequate knowledge, skills, and information necessary to build a strong foundation for development of necessary competencies and 21st century skills. They need more practice and effort to develop and master the required competencies and 21st century skills. This is a gap that needs to be bridged by Hospitality Management students. This information was supported by a study on tourism among hospitality faculty members of the Lyceum of the Philippines University. It was found that teachers need to interact with students and practice equality and fairness to increase their levels of competence (Laguador et al., 2015). Another study investigated students' career expectations in the hospitality industry in Egypt. The respondents believed that language and communication skills were those most important for career development purposes (Saad & Ali, 2016).

As indicated in the Programme for International Student Assessment (PISA) results released by Juan (2019), the Philippines scored the lowest in reading comprehension among 79 participating countries. The Department of Education (2019) welcomed the PISA results and recognized the urgency of addressing issues and concerns regarding knowledge gaps to improve the quality of basic education in the Philippines. These studies support the notion that hospitality students must strengthen their language, communication, and work skills. Student competencies must be strengthened.

The rationale for this study was to widen students' horizons in regards to the development of essential competencies and the 21st century skills in the area of hospitality management. Customary assessment and evaluation is necessary to determine if students have acquired these competencies and to improve their employment potential. The objective of the research was to determine the extent to which students' competencies and 21st century skills were aligned with those of institutional and industry partners. It also examined the value of organizational placements in allowing hospitality students to develop both their soft and technical skills while interning in various hospitality firms, resulting in a well-rounded learning and development paradigm. Furthermore, the researchers realized that the essence of cultivating state-of-the-art competencies and 21st century skills for hospitality management students is related to their institution's progress in reaching its goals. The conceptual model adopted for the study is illustrated in Figure 1.

Figure 1 *Conceptual Framework of the Study*

THEORIES
Goal Setting Theory – Edwin Locke (1960)
Motivation Theory – Abraham Maslow (1943)
Expectancy Theory – Vector Vroom (1964)
Reinforcement Theory – B. F. Skinner (1957)

LEGAL BASIS
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HOSPITALITY MANAGEMENT

COMPETENCIES
- Cooperation
- Following Instruction
- Getting along with others
- Dependability
- Initiative
- Productivity
- Workplace Competencies
- Quality of Work

21st CENTURY SKILLS
- Collaboration Skills
- Personal and Workplace Skills
- Self-direction Skills
- Thinking and Reasoning Skills
- Creativity and Innovation Skills
- Information and Communication Skills

ISSUES AND CONCERNS

A LEARNING AND DEVELOPMENT MODEL

Literature Review

Graduates have found employment very competitive in world markets. Employers were looking for professionals with excellent competencies who possessed both hard and soft skills. In hospitality management, developing skills such as cultural awareness, multitasking, customer service, and communications are necessary to effectively deliver outstanding customer experiences (EHL Insights,

2020). Students need simultaneously to develop their hard skills and soft skills, nurture friendly and approachable personalities, and also increase their visionary skills. Institutions must train their graduates to be competent and competitive to face work challenges (Benckendorff et al., 2010).

The top five characteristics desired from hospitality graduates are teamwork, effective communication skills, professionalism, grooming, and the ability to empathize with guests (Tesone & Ricci, 2006). These five top characteristics were emphasized because, according to Harkinson et al., (2011), knowledge gaps were present in the areas of communication skills, teamwork, and time management. Maher and Neild (2005) mentioned that differing stakeholder opinions caused knowledge gaps. Thus, knowledge gaps occurred because of a disconnection between education and industry requirements in relation to graduates' skills and industry needs (Alhelalat, 2015).

Aside from the observed knowledge gap, O'Mahony et al. (2001) claimed that other problems included different skill sets, kinds of training, and students' readiness to work. Due to these problems, Barrows and Johan (2008) recommended that schools offering Hospitality Management needed to adopt teaching and work strategies that offered quality instruction, along with practical research, as well as developing strong partnership with other schools and agencies.

A competency is described as a personal capability that enables the successful accomplishment of tasks. Accordingly, competencies are the outcomes produced in students (Borich, 1980). In fact, Razak et al. (2014) identified the importance of competency models in training and development, especially in identifying behaviors, determining necessary skills, and developing people for future roles and responsibilities. This model can also be used in identifying and developing employees with necessary competencies to equip them for managerial positions.

Acquisition of 21st century skills are intended to answer the inadequacies of learners in order to address existing needs. These skills include critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, and technology skills (Ravitz, 2014). Critical thinking skills refer to the capability to think and recall comprehensively and ability to comprehend, evaluate, and acknowledge arguments impartially. Collaboration refers to skills in working together in pairs, teams, or groups to analyze complex problems, gather data to solve problems, evaluate results, and make reasonable and appropriate conclusions. Communication skills are when students can gather information, organize and record data, and draw findings and conclusions. This information can be shared either in writing or orally. Creativity and innovation skills are the ability to find solutions and give explanations to complex problems based on analysis and synthesis of what they have learned. Self-direction skills refer to the ability of students to take responsibility in doing their own work and respond to feedback when asked. Local and global connections are when students are able to comprehend the complexities and diversities of community culture and geo-political issues such as history, culture, and the literature of local and foreign countries. Technology skills refer to students' investigative skills in gathering different sources of knowledge through the use of technology, and communicating the same to other information users effectively and efficiently (Ravitz, 2014).

Methodology of the Study

In the study a quantitative approach was employed utilizing a descriptive-correlational and descriptive-comparative design that involved three groups of respondents. The groups were chosen according to inclusion-exclusion criteria. The first set of respondents were 43 fourth-year Hospitality Management students who had undertaken an on-the-job training program. The second set of respondents were nine Hospitality Management teachers who acted as validators of student answers to prevent partiality or bias. Among the Hospitality Management teachers, five were working full time, and four were employed on a part-time basis. The third set of respondents were 18 industry partners. These were owners or managers of industrial establishments, food and beverage establishments, and hospitality management centers. A standardized questionnaire was used as the study's instrument. The questionnaire had three parts for all respondents to answer. Part One dealt with the eight competencies; these competencies were cooperation, following instructions, getting along with others, dependability, initiative, productivity, workplace

competencies, and quality of work. Part Two examined six 21st century skills consisting of collaboration skills, personal and workplace skills, self-direction skills, thinking and reasoning skills, creativity and innovation skills, and information and communication skills. Part Three of the questionnaire dealt with the issues and concerns encountered by the students themselves.

Table 1 shows the inclusion-exclusion criteria that served as the basis for respondent selection.

Table 1 *Distribution of Respondents (N = 70)*

Respondent Groups	Frequency	Percentage (%)
Hospitality Management Students	43	61.43
Hospitality Management Teachers	9	12.86
Industry Partners	18	25.71

The questionnaire for competencies was based on the on-the-job evaluation form of the institution. The 21st century skills were based on the Partnership for 21st Century Skills, and A Survey for Measuring 21st Century Teaching and Learning (Ravitz, 2014), making the instrument reliable and valid. The information was obtained from respondents through online techniques. The distribution of the questionnaire and messages were sent online. This was to safeguard the health of all concerned in accordance with health protocol measures necessitated by the COVID-19 pandemic. Aside from these communication measures, debriefing and referrals were also observed.

The four statistical tests used were weighted means, simple percentages, one-way analysis of variance (ANOVA), and correlation coefficients. The weighted means utilized a five-point Likert scale to determine the extent of the competencies and 21st century skills as shown below.

Table 2 *Competency Ranges*

Mean Ranges	Response Options	Interpretation
4.21–5.00	Very Great Extent (VGE)	Represents an extraordinary level of competencies and 21st century skills. Students had exceeded the level for state-of-the-art.
3.41–4.20	Great Extent (GE)	Competencies and 21st century skills achieved expectations. Students had reached the level for state-of-the-art.
2.61–3.40	Moderate Extent (ME)	Competencies and 21st century skills did not achieve expectations. Students were below the established level for state-of-the-art.
1.81–2.60	Less Extent (LE)	Competencies and 21st century skills failed to meet expectations. Students were far below the established level for state-of-the-art.
0.00–1.80	No Extent (NE)	Competencies and 21st skills were consistently far below expectations. Students totally failed to meet expectations for state-of-the-art.

The simple percentages determined the prevalence of the issues and concerns experienced by students. One-way ANOVA was used in finding the perceptual differences among students, teachers, and industry partners regarding student competencies. The correlation coefficients determined the relationship between the competencies and 21st century skills of the students.

Results and Discussion

In this section, the data results are presented, analyzed, and interpreted in tabular summary form regarding the attainment of the desired competencies and 21st century skills for Hospitality Management students.

Desired Competencies

Eight competencies were expected from Hospitality Management students; these are discussed based on students' immersive on-the-job training prior to graduation. Table 3 shows a summary of the eight competencies, which were ranked according to their weighted means and descriptive equivalents. The results showed that the competencies were considered as valuable or important factors in achieving a state-of-the-art performance by the Hospitality Management students, as indicated by the average value of 3.67, which was equivalent to a great extent.

Table 3 *Summarized Data of Competencies (N = 70)*

Competencies	M	Response	Rank
Cooperation	4.01	GE	1
Following Instructions	3.89	GE	2
Getting Along With Others	3.82	GE	3
Dependability	3.64	GE	4
Initiative	3.57	GE	5
Productivity	3.53	GE	6
Workplace Competencies	3.52	GE	7
Quality of Work	3.44	GE	8
General Average	3.67	GE	

The Table 3 rundown revealed that students had high collaborative and cooperation skills, while the lowest rating was for their quality of work. They had higher ratings in terms of human-relation skills (dependability, following instructions and working with others), but lower for work-related skills (initiative, productivity, and workplace competencies). The students needed to focus more on job-related competencies, how to be more productive, and how to improve the quality of their work. This may indicate that soft skills are easier to cultivate than technical skills in hospitality management.

The significance of the work-integrated learning experience cannot be denied, as student trainees were exposed to the competencies required in their organizations (Rainsbury et al., 2002). The curriculum needs to be checked from the outcomes to be accomplished in work-integrated learning and teachers need to be aware of the competencies required when preparing student trainees ready to venture into employment (Yorke and Harvey, 2005), and their workability on execution of their qualifications. Hodges and Burchell (2003) suggested that those responsible for developing curricula must be perceptive, and make sure that they understand what workplace competencies are required by industry partners.

21st Century Skills

Six 21st century skills were expected from Hospitality Management students and are discussed based on students' immersive on-the-job training that was done prior to graduation. The data shown in Table 4 indicates how the six 21st century skills were manifested by the Hospitality Management students. Based on average scores, collaboration skills ranked first, followed by personal and workplace skills. Self-direction skills were third, and followed by thinking and reasoning skills, creativity and innovation skills, and the last were information and communication skills.

Table 4 *Summarized Data of the 21st Century Skills (N = 70)*

21st Century Skills	M	Response	Rank
Collaboration Skills	3.81	GE	1
Personal and Workplace Skills	3.75	GE	2
Self-direction Skills	3.73	GE	3
Thinking and Reasoning Skills	3.61	GE	4
Creativity and Innovation Skills	3.56	GE	5
Information and Communication Skills	3.28	ME	6
General Average	**3.62**	**GE**	

Generally, students already possessed 21st century skills and were ready for their jobs after graduation, as the scores indicated possession "to a great extent" (*M* = 3.62), although some 21st century skills were not fully developed. Students should focus on developing these skills as individuals or as in groups in order to achieve higher proficiency levels.

The least developed skill was information and communication skills involving linguistic proficiency in dealing with other persons. These findings could be attributed to several students who had little or no connectivity, and so could not use technology as a learning tool, or may have not learned these skills yet because they were not formally taught. They may also have not realized the importance of verbal and non-verbal communication, or of both written and oral communication in the workplace.

Information and communication skills include the ability to use information technology properly. This involves the ability to access data and information, update technology tools, and effectively train students how to use them properly (Partnership for 21st Century Skills, 2008). There are many information, media, and technology learning skills related to information literacy, use and management of information, creating media products, and applying technology effectively. These skills are vital for students to be useful in their future chosen fields of specialization.

Appropriate 21st century skills are needed to develop employee capabilities in their fields of specialization so that they can respond to environmental changes and deal successfully with all upcoming difficulties. Kim et al. (2011) studied the importance of convention hotel employees' competencies and qualifications. Employees who developed 21st century skills were able to improve themselves in both their personal and work-related responsibilities. This means that benefits were realized not only by the employees themselves, but also by their convention hotel businesses. The convention hotel employees with comprehensive 21st century skills were able to perform their work well and competently. This made their hotels successful and provided satisfaction to visitors. Thus, these mutual benefits produced positive outcomes and results for all concerned: hotel employees, guests or visitors, as well as business owners. As a whole, competencies and 21st century skills have greatly helped Hospitality Management students. Development of their careers provides opportunities for self-development and improvement of their families and communities.

An ANOVA test was conducted to see if the three respondent groups had different perceptions of hospitality management student competencies. The data in Table 5 shows that out of eight competencies, only for productivity did the three groups have comparable ratings. The three groups composed of teachers, students, and industry partners did not differ significantly from one another in their mean ratings, which showed similar perceptions and observations of this competency. Productivity can be observed as students interact in classrooms or workplaces.

In terms of productivity, the three respondent group ratings were close to one another since they were based on students' output (*f* = 2.654; *p* = .111). It was evident that the Hospitality Management students tried their best to be more productive. They challenged themselves to accept the responsibilities between themselves and their work, between their work and the common good that is productivity in itself, maintaining professionalism and the spirit of service, and between the school and the community. The observations were based on student productivity results, especially

in the production of hospitality goods and services. Student trainees should produce quality output in order to have effective productivity. Productivity refers to the ability of employees to complete their work within a given time frame. It is also the ability to manage and prioritize their own work.

Table 5 *Perceptual Differences of Three Respondent Groups of Desired Competencies (N = 70)*

Competencies	Group	Mean	Computed f	p-value	Remarks
Cooperation	Teachers	3.8680	17.077**	.000	Reject H_o
	Students	3.9080			
	Partners	4.4240			
Following Instruction	Teachers	3.5780	12.505**	.001	Reject H_o
	Students	3.8060			
	Partners	4.2880			
Getting Along with Others	Teachers	3.4660	18.076**	.000	Reject H_o
	Students	3.7240			
	Partners	4.3080			
Dependability	Teachers	3.3540	6.855**	.010	Reject H_o
	Students	3.7240			
	Partners	3.8680			
Initiative	Teachers	3.3080	5.255*	.023	Reject H_o
	Students	3.6120			
	Partners	3.7780			
Productivity	Teachers	3.3940	2.654 ^{ns}	.111	Do not Reject H_o
	Students	3.4480			
	Partners	3.6940			
Workplace Competencies	Teachers	3.2200	8.809**	.004	Reject H_o
	Students	3.5000			
	Partners	3.8220			
Quality of Work	Teachers	3.1320	20.396**	.000	Reject H_o
	Students	3.5000			
	Partners	3.6700			

*Note. * $p < .05$; ** $p < .01$; ^{ns} not significant*

To put it another way, when people are productive and committed to their jobs, the quality and quantity of their work improves. Hospitality interns with a high level of product and service quality are capable of meeting industry partners' expectations. Strachan (2016) indicated that embedding employability skills into courses enabled students to be aware of their importance to organizations.

An ANOVA test was conducted to compare the three respondent groups' perceptions of students' 21st century skills. Table 6 showed that out of six 21st century skills surveyed, information and communication skills failed to differ significantly from one another.

Table 6 *Perceptual Differences of Three Respondent Groups of 21st Century Skills (N = 70)*

21st Century Skills	Group	Mean	Computed f	p-value	Remarks
Collaboration Skills	Teacher	3.51	14.227**	.001	Reject H_o
	Students	3.68			
	Partners	4.24			
Personal and Workplace Skills	Teacher	3.58	19.71**	.001	Reject H_o
	Students	3.59			
	Partners	4.09			
Self-Direction Skills	Teacher	3.49	13.279**	.001	Reject H_o
	Students	3.66			
	Partners	4.04			
Thinking and Reasoning Skills	Teacher	3.44	10.675**	.002	Reject H_o
	Students	3.53			
	Partners	3.85			
Creativity and Innovation Skills	Teacher	3.40	6.377*	.013	Reject H_o
	Students	3.54			
	Partners	3.76			
Information/Communication Skills	Teacher	2.98	1.249^{ns}	.321	Do not reject H_o
	Students	3.14			
	Partners	3.48			

*Note. * $p < .05$; ** $p < .01$; ^{ns} not significant*

In terms of information and communication skills, the three groups had comparable observations of the students ($f = 1.249$; $p = .321$). This suggests that students were really quite weak in both their written and oral communication skills, which can be easily observed when they interacted with one another. This is an innate capacity of a person that cannot readily be changed. Hence, how they interacted or communicated with classmates was similar to their communication with teachers and people in the industry. The information and communication skills learned from the classroom may likewise be useful during their on-the-job training. It is important to learn communication skills so that they can express themselves effectively and efficiently when handling customers. Communication skills are essential abilities, and should be a focal point of consideration at universities (Umar, 2006).

The competencies of students were significantly related to their 21st century skills. Table 7 presents this relationship, showing that when one variable increased, the other variable also increased. Students with a high level of desired competencies were also those with a high level of 21st century skills, and similarly those with a low level of competencies also had a lower level of 21st century skills. This could be attributed to the areas in the two assessment tools. What the university expected of their hospitality management graduates was comparable to what was expected in regard to their 21st century skills. Both assessments measured the technical and soft skills of the students.

Table 7 *Correlation of Competencies and the 21st Century Skills* (*N* = 70)

Variables	Mean	SD	Computed r	p-value	Remarks
Competencies	3.68	0.405	.88**	.001	Reject Ho
21st Century Skills	3.61	0.686			

The students had varied experiences not only in their classes but also in their training experience at their assigned workplaces. Table 8 presents the issues and concerns mentioned by the three groups of respondents. It shows that the students had five issues and concerns during their on-the-job training, of which poor communication skills were ranked the highest. They admitted that their communication skills were poor, and this problem affected customer relationships, their critical thinking, and their relationships with owners and managers. Poor communication skills also affected

their interpretation of company rules and regulations, and resulted in practices that led to disagreements between themselves and managers. This happened due to lack of practice in trying their best to speak in English.

Table 8 *Issues and Concerns of Hospitality Management Students* (*N* = 70)

Issues and Concerns	Frequency	%	Rank
Poor communication skills	62	88	1
Misunderstanding of company or industry memorandum of agreement	58	83	2
Confusing company rules	46	66	3
Proper handling and use of tools and equipment	45	64	4
Customer relationships	30	42	5

By identifying internship problems, Henry et al. (2001) attempted to describe how on-the-job training programs can be carried out efficiently and effectively. This involved both trainees and researchers; internship problems were categorized as "work place," "working hours," "insufficient supervision," "ignorance about importance of working," and "wages." Although carried out in different fields, it was noted that similar problems occurred in tourism-related internship programs (Busby & Gibson, 2010; Lee, 2006).

Despite these limitations experienced by the Hospitality Management students, still they looked forward to better job opportunities once their problems and mistakes were corrected and improved. They had a strong belief that these experiences would gradually improve them, their jobs, and their futures. Their experiences were the results of what they had learned at school and applied during their practicum activities. The on-the-job training was designed to acquire necessary experience for them. Internship programs enabled students to understand and examine possible careers and settle on a career choice. However, it cannot be denied that on-the-job students encountered challenges and difficulties during their training.

When the COVID-19 outbreak spread globally, wrecked the economy, and eventually halted the hospitality and tourism industries' economic activities in the early months of 2020, it was one of the most severe difficulties for hospitality interns. The highly contagious disease is still wreaking havoc on the sector, raising serious questions about its current and long-term survival (Kaushal & Srivastava, 2021). Internships are well-known for providing face-to-face opportunities for students to gain practical or hands-on experience in a real-world situation. Due to the pandemic, however, many industry partners and educational institutions hurried to find solutions, particularly for hospitality student interns under the new normal. The temporary termination of face-to-face internship programs and the change from traditional to digital internship programs instilled dread and anxiety among hospitality interns. They feared that not receiving practical training would restrict their competencies and skills. To avoid impeding the learning and growth of hospitality students, digital technologies and online internships became substitute options. With that in mind, educators have stressed the importance of using technology to foster virtual interactions in order to limit physical contact between people (Kaushal & Srivastava, 2021). However, according to Hora et al. (2021), it's a stretch to claim that schools and universities are undertaking large-scale experiments in which students do online internships. There is little evidence to support of their usefulness and success in contributing to good educational or employment outcomes after graduation.

Circumstances and changes can have a significant impact on students' personal and professional lives. Change is inherent in this world; it is the only constant. Adapting to change allows hospitality students to become more flexible, understanding, and well-prepared for the future.

Conclusions

This study concluded that students' lack of information and communication skills influenced their quality of work and their on-the-job training. Hence, to cultivate state-of-the art competencies and 21st century skills in Hospitality Management students, a learning and development model must be developed that focuses on improving their quality of work, along with information and

communication skills. Learning modalities refer to a learner's individual learning style and preferences for how information is absorbed and processed (or modes). This model serves as an institutional platform for the growth and development of the hospitality management students, particularly in their weakest points. Its output is a learning and development model that is based on the competencies and 21st century skills that should be developed and strengthened in Hospitality Management students. This also comprises training, seminars, monitoring, mentoring, coaching, and learning and developmental activities. Proficiency and skill in the quality of work can be judged by the results of one's work. Information and communication skills can be harnessed through the proper use of technology and in written and oral communication.

The results suggest that competencies and 21st century skills must be specifically embedded or incorporated into different subjects or courses. The different issues, concerns and gaps should be addressed by providing a series of activities to enhance student development. University policies and practices must be regularly reviewed to meet the demands of the times. By doing this, teachers may be able to help students address whatever issues and concerns they have encountered, and enhance their workplace confidence. Regular communication and giving feedback to continue motivating and innovating each other will ensure that teachers, industry partners, and students are moving forward in the same direction. The hospitality management faculty, with the help and guidance of administrators and the support extended by industry partners through linkages, will guide and assist students in developing the necessary competencies and skills needed to achieved common goals.

Consequently, the goal of this study was to align students' competencies and 21st century skills with their institution's and industry partners' objectives, manage these competencies and skills on a daily basis, evaluate and monitor student performance, and stimulate individual development in order to improve student contribution to institutional success. Continuous learning, real-time feedback, and intuitive goals are the cornerstones of state-of-the-art operations, allowing hospitality management students to take charge of their own professional development. Furthermore, this study will be of value in guiding future researchers who wish to conduct studies on overcoming the barrier of skill mismatches among hospitality management students. It may also help to enable 21st century student life and work outcomes to be better embedded into curricular programs.

Limitations of the Study

This study was restricted to quantitative data, and focused on understanding how interactions among students, schools, and industry partners affected desired competencies and 21st century skills. Out of eight 21st century skills sets identified by Ravitz (2014), the study examined only the following: collaboration, personal/workplace skills, self-direction skills, thinking/reasoning skills, creativity/ innovation skills, and information/communication skills.

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