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Human capital development in university teaching environment: the role of workplace and innovation culture

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ABSTRACT

BACKGROUND AND OBJECTIVES: Innovation can help the human capital of teachers to work more creatively. The job atmosphere consists of the physical environment in which teachers work and the psychological or social-emotional climate created by the interactions and relationships between teachers, students, and school officials. The study focused on the teaching environment of public tertiary teachers and their association with innovation.

METHODS: The study employed a descriptive research method to examine the relationship between the teaching environment and innovation among tertiary teachers. 196 teachers and 28 superior respondents filled out the survey questionnaire. The instrument used the percentage and frequency to analyze the respondent's profile data and verbal descriptions and weighted mean to describe the variables. It used the following scale: Never, Seldom, Sometimes, Often, and Always.

FINDINGS: The respondent profile reveals that 53.1% are females and 46.9% are males. 36.7% of respondents have five years of teaching experience, and 30.6% have a master's degree, while 22.4% have a doctorate degree. Regarding challenging work, teachers and their superiors responded "always" to opportunities to express their ideas, with a mean rating of 4.25 and 4.29, respectively. Teachers also use innovative strategies to improve student performance, with mean ratings of 4.15 and 4.35. Teachers are recognized for a job well done in terms of organizational encouragement, with mean ratings of 3.98 and 4.14, respectively. Teachers possess the professional skills required for resources, with mean ratings of 4.05 and 4.54. Their superiors appreciate extra effort in supervisory engagement, with mean ratings of 4.20 and 4.43. Peers are supportive, with mean ratings of 4.23 and 4.25. Organizational independence was rated "seldom" by superiors on the item that some teachers ingratiate themselves with school officials to the disadvantage of their co-teachers, with a mean rating of 2.43. The result in the Culture of Innovation category shows that school officials allow teachers to try new ideas or strategies, as rated "always" by teachers and their superiors.

CONCLUSION: These findings may provide teacher's human capital development program to align the faculty in their field of specialization, minimize inbreeding and raise the quality of faculty members, and encourage senior faculty to undergo leadership capability training to prepare them how to handle sensitive positions in the university, to give opportunities to be more innovative, to engage them in high-quality research.

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INTRODUCTION

To attain high standards in teaching and learning, it is crucial for faculty members to fully embrace their role as educators and receive support from both their institutions and professional development opportunities (Steinert *et al.*, 2019). One's experience in teaching has a positive correlation with students' achievement gains for most of a teacher's career. As teachers accumulate experience, their students tend to perform better in areas beyond test scores. When teachers work in an environment that fosters support and collaboration, or when they gain more experience teaching the same grade, subject, or in the same district, they tend to become more effective. Experienced teachers can also provide benefits to their colleagues (Podolsky *et al.*, 2019). Ekemam and Okpara (2020) and Santos (2023) found that the few human capital development programs that were implemented had a significantly positive impact on the performance of both staff and students in state universities. They suggested the implementation of more human capital development programs and emphasized the importance of such programs as the best strategy to improve performance in the education sector. The teacher performance was positively and significantly influenced by factors such as competence, motivation, and the learning environment, as well as relationship antecedent variables that impact the quality of education. Furthermore, the quality of education was affected by the performance of teachers (Mulang, 2021). But the teaching-learning process is the main issue faced by public tertiary teachers. More than funds provided by the government are needed to resolve these issues. To address these issues, teachers are required to be innovative and creative for the resolution of these problems. All the social or process encounters and problems provide an opportunity for improvement and change (Innovating Education, 2016). There is a need for improvement in the existing process and make the change sustainable for better outcomes. The daily teaching activities that teachers encounter provide them with numerous opportunities to produce creative solutions and deal with challenges related to performing their duties. Innovation can help teachers to work more creatively. To be innovative, teachers need an environment that encourages them to produce innovative ideas, promotes their personal growth, and allows them to

be creative in their work. In order to be an effective teacher, it is important to be able to oversee the need for adaptation and innovation in everyday teaching situations. Improving teaching and learning requires careful consideration of the teaching environment, which should provide a supportive structure for student learning. Teachers should seek out conditions that allow them to apply their knowledge effectively in the classroom. In this context, the researcher, who is a public tertiary teacher, believes it is important to examine the teaching environment and its relationship to innovation. The job atmosphere consists of both the physical environment in which teachers work and the psychological or social-emotional climate, which is created by the interactions and relationships between teachers, students, and school officials (Corpuz and Salandanan, 2003). The physical environment refers to the physical characteristics of the classroom, such as the condition of the room, the arrangement of furniture and seating, the temperature, and the lighting. A clean, organized, spacious, well-lit, and ventilated, and quiet classroom is conducive to learning, while a dirty, cluttered, warm, poorly ventilated, and noisy classroom is not. To create an effective learning environment, the classroom should be structured in a way that promotes teaching and learning. According to a study by Florido (2006), schools in the Philippines often face challenges due to limited budgets and resources, such as a high student-to-textbook ratio and a lack of chairs or technology equipment. Despite these challenges, teachers in the Philippines have found ways to provide their students with a good education. The way students perceive the overall atmosphere and environment of their school has a significant impact on their writing and numeracy performance. This relationship is partially explained by the psychological connection students have with their school. Additionally, the way staff members perceive the school climate can also impact students' numeracy achievement (Maxwell *et al.*, 2017). A positive classroom climate is essential for fostering personal and subjective learning and for valuing the unique experiences of each learner. It promotes diversity and sees difference as a positive aspect, rather than a deficiency. This type of climate allows for mistakes, tolerates ambiguity, and encourages self-evaluation in a supportive group setting. It also promotes openness, trust, and a sense of belonging and respect for all

individuals, which are necessary for fully developing cognitive and emotional faculties, such as the senses, instincts, imagination, memory, feelings, emotions, and will. The classroom is the setting for teaching and learning. It has a psychological climate, shape by the interactions of key players and a physical environment that can influence learning. A conducive physical environment allows for active participation in learning activities, is arranged in a flexible way, and is safe, clean, peaceful, and free from unnecessary noise. Establishing routines is also important for creating a well-organized classroom, as it helps to maximize instructional time and facilitate smooth transitions between activities. These routines can be established for distributing and collecting materials, starting and ending lessons, and conducting group work, independent work, and other teacher-led activities. Innovation refers to the introduction of new services, processes or products into the market. It encompasses all aspects of an organization, from development and research to marketing and manufacturing, and involves finding effective ways to bring innovative technology to meet market needs (DuBrin, 2019). Innovation is the process of generating new ideas and implementing them in practice. This process typically involves creating ideas through spontaneous creativity, intelligence, information processing, and initial experimentation to determine their potential value and practical application (Samimi and Shahriari Moghadam, 2020; Rahman et al., 2022; Saif et al., 2023; Ratnawati et al., 2023). It is important to note that the innovation process is not complete until the final application has been achieved. Simply having an innovative idea is not enough – it must go through all stages of innovation in order to realize its value (Acar et al., 2019). Innovation involves transformation, improvement, and modernization. In Philippines, educational institutions, particularly higher education at the tertiary level, have embraced innovation. Enhanced faculty and student competence is developed by curriculum enhancement and planning, which is focused on competency-based and outcome-based education, and through the strengthening of partnerships between industry and academia. Grants for faculty development are also accessible to both public and private sector educators to help them pursue research, graduate degrees, and industry immersion. Promotion of excellence is done through supervisory and regulatory functions, such as the

granting of autonomous and deregulated status to high-performing institutions, the extension of financial support to private universities and colleges for internationalization initiatives and the closure of substandard programs. Centers of development and excellence are also recognized, and collaborative avenues such as Philippine Higher Education Research Network (PHERNET) and Higher Education Regional Research Center (HERRC) are being created to support research capacity building (Carillo, 2017). Carillo (2017) also highlighted the importance of innovative and ethical governance in the Philippines, including the use of anti-corruption measures within the bureaucracy to ensure and the compliance of state universities (SUCS) and colleges with Commission on Higher Education (CHED) policies and standards, the regional consolidation of state universities and colleges, the implementation of a strategic performance management system and efficient resource management. Several factors that influence innovation and creativity, include strategy, structure, open communication, support mechanisms, and behavior that encourages innovation. These efforts demonstrate that higher education in the Philippines is undergoing a transformation as it adapts to changing times and evolving expectations and demands, a reality shared by higher education institutions around the world (Martins and Terblanche, 2003). The review of related studies and literature provided the researcher with insights that helped to formulate the concepts for this study. The literature on the features of the teaching environment helped the researcher to understand the relationship between the teaching environment and innovation, particularly in terms of facilitating the teaching, learning process, and improving student progress. Additionally, by reviewing what has been written on the teaching environment in schools, the study was able to identify ways in which innovations can address issues that emerged in the findings. Overall, tertiary education in the Philippines is undergoing a transformation as it adapts to changing times and evolving demands and expectations. As a result, changes are being made to the teaching environment, including the physical environment, psychological climate, innovation, and faculty factors, in order to reflect these changes. This study focused on the features of the teaching environment of public tertiary teachers and their association with innovation. Specifically, it aimed to

examine the profile of the respondents in terms of age, civil status, gender, years of teaching experience, and highest educational attainment, the teaching environment of the teachers in terms of challenging work, freedom, organizational encouragement, resources, supervisory encouragement, workgroup support, and organizational independence, the culture of innovation among tertiary teachers, the relationship between the respondents' profile and the teaching environment, and between the teaching environment and innovation in their school and on the basis of the results of the study, the development of a proposed human capital program. To achieve these objectives, the research survey was conducted in different satellite campuses of Nueva Ecija University of Science and Technology in 2017 and updated 2022 in Philippine. This study seeks to bridge the gap in understanding the relationship between the teaching environment and innovation in public tertiary education institutions. By examining the features of the teaching environment and their association with innovation, this research aims to contribute to the ongoing conversation on how to improve the quality of education and support the professional development of teachers. Through the development of a proposed human capital program, this study hopes to provide actionable insights that can help guide policymakers and educational institutions in fostering a more conducive environment for teaching and learning.

MATERIALS AND METHODS

Survey design and data collection

This study employed the descriptive research method to examine the relationship between the teaching environment and innovation among tertiary teachers at the Nueva Ecija University of Science and Technology. Descriptive research is a method that aims to describe the current state of a situation as accurately as possible and may also explore the

causes of specific phenomena. It involves a thorough and careful description of the studied subject and may also involve comparison and contrast, measurement, classification, interpretation, and evaluation. Descriptive research seeks to fully and accurately describe a given state of affairs (Khalid, 2022). It also involves the data's interpretation and significance (Fraenkel et al., 2012). Fig. 1 displays a map of Southeast Asia, highlighting the location of the Philippines. The Philippines is a country in Southeast Asia comprising over 7,600 islands and is located in the western Pacific Ocean (D'arcy, 2013) and Fig. 2 shows the geographic location of the study area; (a) Philippines, (b) Nueva Ecija. Nueva Ecija is a province in the Philippines located in the central region of Luzon Island. It is bordered by the provinces of Aurora, Bulacan, Pampanga, Tarlac, and Nueva Vizcaya. The province has 27 municipalities and 5 cities, including Cabanatuan City, Palayan City, San Jose City, Gapan City, and Muñoz City and the total number of barangays in the province is 849 (PhilAtlas, 2020). Table 1 shows that the study comprised 198 tertiary teachers as respondents. The total number of superior respondents was 33 within the area of Nueva Ecija Philippines They belonged to the four campuses of Nueva Ecija University of Science and Technology (NEUST) Gabaldon Campus (GNT), San Isidro Campus (SIC), Sumacab Campus and General Tinio Street Campus (GT). However, 196 tertiary teacher respondents, and only 28 superior respondents returned their survey questionnaire. The validation and use of the descriptive method were done using observation and interviews.

The instrument used was developed by Brooks (1999) and has three parts. Part I is a profile of the respondents. Part II, the Teaching Atmosphere Scale, consists of seven subscales measuring various job factors, including organizational independence, workgroup support, supervisory encouragement, challenging work, freedom, sufficient resources,

Table 1: Tertiary teacher respondents

Campus	Teachers	Percentage	Superior	Percentage
Gabaldon	22	11.2%	3	10.71%
General Tinio St.	111	56.63%	15	53.57%
San Isidro	16	8.16%	3	10.71%
Sumacab	47	23.98%	7	25.00%
Total	196	100.00%	28	100.00%

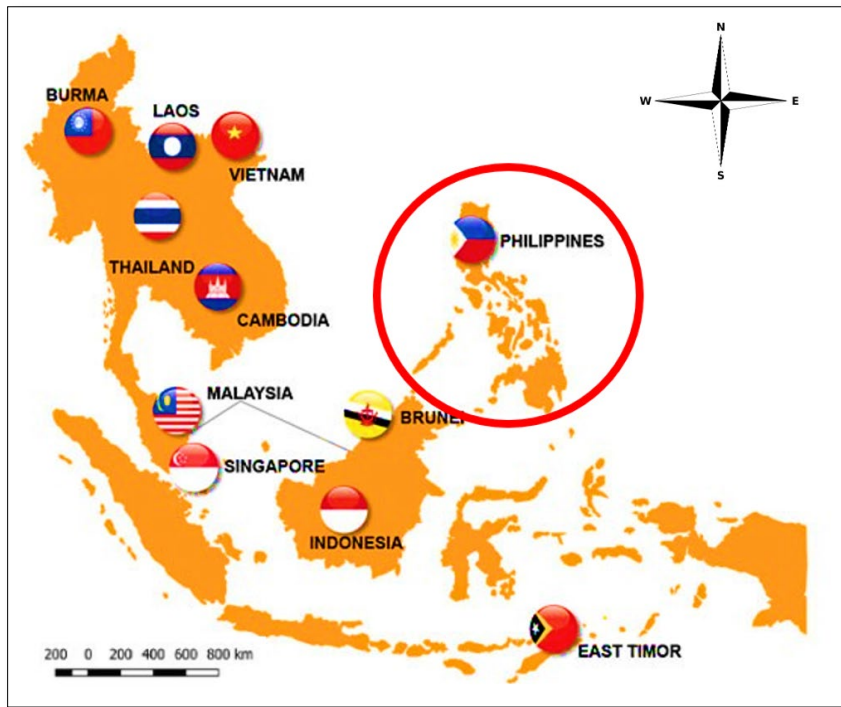


Fig. 1: Geographic location of the study area; the map of south east Asia (D'arcy, 2013)

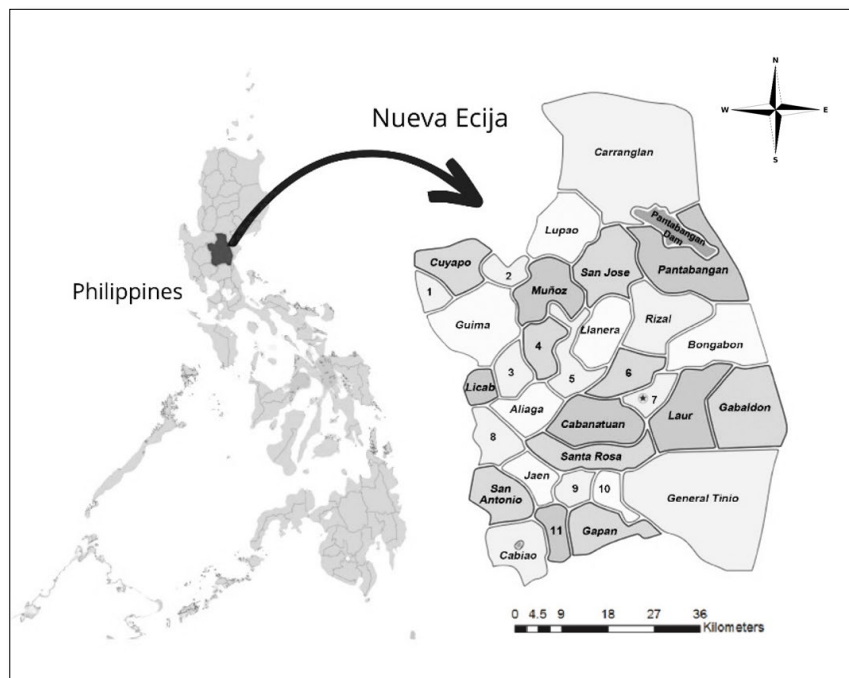


Fig. 2: Geographic location of the study area; (a) Philippines, (b) Nueva Ecija (PhilAtlas, 2020)

and organizational encouragement. These subscales are developed (Good and Lavigne, 2017), and each consists of five items. The researchers used a Likert scale with five response options: “Never” (1), “Seldom” (2), “Sometimes” (3), “Often” (4), and “Always” (5). Part III is an innovation checklist with 10 items, also using the Likert scale and response options as in Part II. We used percentage and frequency to analyze the respondent’s profile data. We used verbal descriptions and weighted mean for the description of the variables and used the following scale: “Never” (scores between 1.00 and 1.79), “Seldom” (scores between 1.80 and 2.59), “Sometimes” (scores between 2.60 and 3.49), and “Often” scores between 3.40 and 4.29, and “Always” (scores between 4.20 and 5.00). To determine the correlation between innovations and job environmental factors, we used the Pearson Product Moment Correlation coefficient. To test the validity and reliability of the instrument, we conducted a test-retest on teachers enrolled in the Graduate School of Araullo University (AU) to ensure that it was culture-free.

RESULTS AND DISCUSSION

Table 2 shows that both the teachers and superiors responded “always” when asked about opportunities to share their ideas, with weighted means of 4.25 and 4.29, respectively. They also responded “always” when asked about using innovative approaches and strategies in teaching, with a weighted mean of 4.35. When asked about putting all their skills to use, the teachers responded “often” and the superiors responded “always,” with weighted means of 4.1 and 4.39 respectively. Additionally, both groups responded “always” when asked whether their job stimulates them to work harder and whether their tasks are challenging,

with weighted means of 4.09 and 4.39, respectively. These results suggest that the teachers find their job stimulating because it allows them to work hard, use their skills and knowledge effectively, and express their ideas freely. The verbal interpretation of “always” indicates that the teachers and superiors feel confident, at ease, and comfortable in their job. Being different does not mean being inadequate. Teachers should embrace challenging work and recognize that mistakes are a natural part of the learning process. This leads to openness to innovative ideas and prevents students and teachers from being judgmental in the evaluation process. Evaluation should be a cooperative process with an emphasis on self-evaluation, which encourages transparency and openness rather than concealment (Alvarez *et al.*, 2016).

Table 3 shows the teachers along with their superiors both rated the job atmosphere as “always” when asked in relation to freedom, with weighted means of 4.15 and 4.35, respectively. This means that the teachers are free to implement innovative strategies that may improve student performance, with a weighted mean of 4.24 and 4.43 for the freedom to decide how to teach. They were also often given opportunities to express their opinions and ideas on how to be better teachers, with weighted means of 4.23 and 4.25, respectively. The results also showed that the teachers had an open environment which is free from defensive behavior, with weighted means of 3.97 and 4.14, and were allowed to access essential information about their service, with weighted means of 3.96 and 4.43. These results suggest that the school gives teachers a high degree of empowerment and autonomy, allowing them to choose and use innovative strategies to provide quality teaching to their students. They also have academic freedom

Table 2: Job atmosphere of Teachers in terms of Challenging work

Work Challenges	Tertiary Teacher		Superior	
The tasks I perform are challenging	4.09	Often	4.39	Always
My job puts all my skills to use	4.26	Always	4.25	Always
My job gives me opportunities to express my ideas	4.38	Always	4.39	Always
My job stimulates me to work harder	4.19	Often	4.39	Always
I use new strategies and approaches in teaching	4.35	Always	4.00	Often
average Weighted Mean (WM)	4.25	Always	4.29	Always

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 – Always

to remain true to their intellectual commitments and pedagogical philosophy, which serves the public good and promotes a good job atmosphere. work autonomy can be obtained when employees are allowed to perform their duties with little supervision, which means they are given a certain level of freedom and trust to complete their tasks independently. Nonetheless, it does not imply total freedom or lack of accountability, but it involves striking a balance between independence and accountability to ensure optimal performance. Proper implementation of work autonomy can lead to increased employee satisfaction and motivation, as they feel valued and trusted by the organization (Armas *et al.*, 2019). A conducive learning environment in the workplace is characterized by promoting active engagement and empowering individuals to explore and discover the personal significance of ideas. This type of environment values academic freedom, which enables educators to stay committed to their intellectual and pedagogical beliefs, ultimately contributing to the greater good of the public and fostering a positive work atmosphere. Instead of imposing

ideas, facilitation allows for personal discovery and meaning-making (OECD, 2009).

Table 4 shows that the teachers along with the superiors rated the following areas as “often”: recognition for a job done well (weighted means of 3.98 and 4.14, respectively), feeling that the school administrators show appreciation for their contributions (weighted means of 3.95 and 4.07, respectively), feeling that the school is concerned about their overall satisfaction with their work (weighted means of 3.94 and 4.07, respectively), receiving help when needed (weighted means of 3.94 and 4.07, respectively), and feeling encouraged to approach to the problems as opportunities (weighted means of 3.89 and 3.86, respectively). These results suggest that the school provides an elevated level of motivation and support to its teachers, which is reflected in their efforts and positive attitudes towards achieving the school’s goals and objectives. The school also appreciates and recognizes the excellent work of its teachers, which serves to further inspire and energize them in their roles. Overall, there is a powerful sense of mutual positive intention between the school and

Table 3: Job atmosphere of Teachers in terms of Freedom

Work Freedom	Tertiary Teacher		Superior	
I have the freedom to decide how I am going to teach	4.24	Always	4.43	Always
I am allowed access to vital information about my work	3.96	Often	4.43	Always
I am given opportunities to express my ideas and opinion on how I can be a better teacher	4.23	Always	4.25	Always
I can try out innovative strategies that can result in improving students’ performance in school	4.35	Always	4.50	Always
There is an open environment that is free from defensive behavior	3.97	Often	4.14	Often
average Weighted Mean (WM)	4.15	Often	4.35	Always

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 - Always

Table 4: Job atmosphere of Teachers its Organizational Encouragement

Work Encouragement	Tertiary Teacher		Superior	
Help is available when I need it	3.94	Often	4.07	Often
Teachers are recognized for a job well done	3.98	Often	4.14	Often
The school cares about my general satisfaction with my work	3.94	Often	4.07	Often
Teachers are encouraged to view problems as opportunities	3.89	Often	3.86	Often
School administrators show appreciation for the teacher's contribution to the attainment of the goals and objectives of education	3.95	Often	4.07	Often
average Weighted Mean (WM)	3.94	Often	4.04	Often

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 - Always

its teachers towards the success of the institution.

It is important for school leaders to foster openness and transparency among their staff, as this helps to build trust and create a positive atmosphere where employees feel valued and comfortable. When employees feel respected and supported, it can improve their confidence and self-esteem in their work, and also give them a sense of belongingness. A supportive and positive job atmosphere is necessary for the full development of employees’ appetitive and cognitive faculties, such as their will, emotions, feelings, senses, memory, instincts, and imagination (Schunk *et al.*, 2008). Trust is built through consistent behaviors and actions that allow for evaluation and re-evaluation of each other. In an organizational hierarchy, supervisors have the authority to empower their employees, and it is important for them to create a positive culture that reinforces the contributions and roles of their staff. Without a clear understanding of their roles and skills in the organization, employees may not be able to reach their potential and contribute effectively. Overall, this suggests that a supportive and positive job atmosphere is crucial for motivating and inspiring both teachers and superiors (Henderson

et al., 2008). Table 5 shows that the teachers, as well as their superiors rated several factors as often related to the opportunities at the school and the availability of resources. These included: feeling that they possess the professional skills required (weighted means of 4.05 from teachers and 4.54 from superiors), having opportunities to showcase their creativity (weighted means of 3.73 from teachers and 3.86 from superiors), having access to learning resources to complete tasks (weighted means of 3.81 from teachers and 3.94 from superiors), feeling that there are enough teachers at their school (weighted means of 3.48 from teachers and 3.96 from superiors), and feeling that there are adequate supplies and equipment (weighted means of 3.40 from teachers and 3.36 from superiors). The results suggest that the school tries to provide sufficient resources, including opportunities, materials, and manpower, and that teachers feel they have the necessary skills and are given opportunities to show their creativity. The school also has an adequate number of teachers, equipment, and sufficient supplies, which may indicate a concern for both students and faculty. It is important for teachers to be resourceful and find ways to make things

Table 5: Job atmosphere of Teachers its Resources

Resources	Tertiary Teacher		Superior	
There is an adequate number of teachers in our school	3.48	Often	3.96	Often
Learning needs for the accomplishment of tasks are available	3.81	Often	3.96	Often
Opportunities where teachers can show their creativity are present in our school	3.90	Often	3.86	Often
School supplies and equipment are adequate	3.40	Often	3.36	Sometimes
Teachers possess the professional skills required	4.05	Often	4.54	Always
average Weighted Mean (WM)	3.73	Often	3.94	Often

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 - Always

Table 6: Supervisory Encouragement

Supervisory Encouragement	Tertiary Teacher		Superior	
School officials avoid using a negative mindset when teachers approach him/her with new ideas	3.95	Often	4.00	Often
School officials welcome diverse ideas and opinions	3.96	Often	4.07	Often
School officials encourage teachers to be more open to new ideas and innovative teaching techniques	4.15	Often	4.36	Always
School official value my contribution to the well-being of our school	4	Often	4.36	Always
My superior appreciates the extra effort from me	4.2	Often	4.43	Always
average Weighted Mean (WM)	3.73	Often	3.94	Often

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 - Always

happen, including finding ways to secure materials and supplies and building trust with their parents and students. A lack of trust can negatively impact the classroom environment (Mulford, 2003). The absence of trust can have adverse effects on the work atmosphere. It can affect employee morale, decrease productivity and motivation, and damage relationships among colleagues. Building and maintaining trust is crucial to creating a positive and healthy workplace environment (Smith, 2019).

Table 6 illustrates that the teachers and superiors rated several factors as “often” and “always” related to their experiences with school officials. These included the feeling that their superiors appreciate their extra effort (weighted means of 4.20 from teachers and 4.43 from superiors), feeling that school officials encourage them to be open to innovative teaching techniques and new ideas (weighted means of 4.15 from teachers and 4.36 from superiors), and feeling that school officials value their contributions to the well-being of the school (weighted means of 4.0 from teachers and 4.36 from superiors). However, both groups rated often on the items of feeling that school officials welcome diverse opinions and ideas (weighted means of 3.96 from teachers and 4.07 from superiors) and feeling that school

officials neglect using a negative perspective when approached with new ideas (weighted means of 3.95 from teachers and 4.00 from superiors). These results suggest that the school provides an important level of motivation and support to its teachers, and that teachers feel that their superiors value their contributions and appreciate their extra effort. However, there may be some room for improvement in terms of avoiding a negative perspective when welcoming diverse ideas and being presented with innovative ideas. Motivation and tangible incentives from school officials can increase performance on tasks, encourage smart thinking, and support both the quantitative and qualitative goals to be achieved effectively. Motivation also directly impacts innovation in an organization, and it is important for organizations to recognize not only achievements but also efforts exerted (Forson et al., 2021).

Table 7 indicates that teachers and their superiors perceive their peers as supportive, with teachers rating the support at a weighted mean of 4.23 and superiors rating it at 4.25. However, there are some discrepancies in the ratings given by teachers and superiors on certain items. For example, while teachers rated their co-teachers as always willing to help with special favors (weighted

Table 7: Work Group Support

Group Support	Tertiary Teacher		Superior	
My peers are supportive of me	4.23	Always	4.25	Always
I can rely on my co-teachers for help when I need it	4.13	Often	4.21	Always
My co-teachers rally to my side when I experience work problem	4.02	Often	3.93	Often
My co-teachers care about my well-being	4.08	Often	4.18	Often
My co-teachers are willing to help me when I need a special favor	4.20	Always	4.14	Often
average Weighted Mean (WM)	4.13	Often	4.14	Often

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 – Always

Table 8: Organizational Independent

Work Independent	Tertiary Teacher		Superior	
Accomplishments are not recognized	2.55	Seldom	2.25	Seldom
Some teacher ingratiate themselves with the school official to the disadvantage of their employees	2.81	Sometimes	2.43	Seldom
My salary's not commensurate with my work	2.74	Sometimes	2.18	Seldom
An autocratic style of leadership is evident	2.62	Sometimes	2.11	Seldom
New ideas or innovation are discouraged by school	2.30	Seldom	1.93	Seldom
average Weighted Mean (WM)	2.60	Sometimes	2.18	Seldom

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 – Always

mean of 4.20), superiors only rated them as often willing to do so (weighted mean of 4.14). Similarly, while teachers rated their ability to rely on their co-teachers for help when needed as always (weighted mean of 4.13), superiors only rated it as often (weighted mean of 4.21). In terms of the co-teacher's care for the well-being of the teachers, both teachers and superiors rated it as often, with teachers giving it a weighted mean of 4.08 and superiors rating it at 4.18. Regarding co-teachers rallying to support teachers during work problems, teachers rated it at a weighted mean of 4.02 and superiors rated it at 3.93. The findings of the study show that both teachers and their superiors agreed that their peers consistently provide support, with both groups answering "always" to the question of peer support. This suggests that both teachers and their superiors believe that their colleagues are always willing to help, particularly when it comes to innovative teaching techniques. However, there was a discrepancy in the responses to the question of co-teacher support, with teachers answering "always" and superiors answering "often." This may be due to the fact that superiors do not interact with teachers as frequently, and therefore may not be as aware of the level of support that co-teachers provide for one another. Overall, the results indicate that co-teachers are consistently willing to offer support to their colleagues, especially when they encounter problems. According to [Caruso and Woolley \(2008\)](#), workgroups can provide numerous benefits for both individuals and the group as a whole. These benefits

include the ability to break down complex tasks, effectively manage time, improve understanding through discussion and explanation, provide and receive feedback, challenge assumptions, and improve communication skills. All of these skills can be reinforced through participation in a workgroup.

[Table 8](#) illustrates the teachers rated the occurrence of certain negative situations as "sometimes," with a weighted mean of 2.81. In contrast, superiors rated these same situations as "seldom," with a weighted mean of 2.43. These negative situations include teachers ingratiating themselves with school officials to the detriment of their colleagues, a lack of salary commensurate with the work being done (rated by teachers at 2.74 and by superiors at 2.18), an autocratic style of leadership (rated by teachers at 2.62 and by superiors at 2.11), a lack of recognition for accomplishments (rated by teachers at 2.55 and by superiors at 2.25), and a discouragement of new ideas or innovation (rated by teachers at 2.30 and by superiors at 1.93). The findings of the study suggest that teachers may feel that they are not given a high degree of organizational independence by their school. However, the superiors in the department believe that any issues or challenges faced by the teachers are being properly addressed. According to [Corpuz and Salandanan \(2003\)](#), the work atmosphere for teachers includes both the physical environment and the psychological climate, which is shaped by the interactions and relationships between teachers, school officials, and students. The importance of a strong and collaborative relationship between

Table 9: Tertiary teachers' culture of innovation

Culture of Innovation	Tertiary Teacher		Superior	
New ideas are encouraged in our school	4.19	Often	4.14	Often
There is generally a cooperative and collaborative atmosphere in our school	3.99	Often	4.14	Often
Teachers are encouraged to be more open to new ideas and experience	4.14	Often	4.00	Often
The teachers are provided with stimulating tasks that create a sense of personal growth	4.03	Often	3.86	Often
Decision-making does not stifle those teachers who have different styles	3.80	Often	3.71	Often
The school makes sure that creative teachers do not perform specific tasks all day long	3.59	Often	3.29	Sometimes
Teachers are encouraged to communicate with one another	4.11	Often	4.36	Always
School officials welcome diverse ideas and opinions	4.05	Often	4.11	Often
Creative behavior is recognized	4.11	Often	4.11	Often
School officials let teachers try new ideas or strategies	4.20	Always	4.2	Always
average Weighted Mean (WM)	4.02	Often	4.00	Often

Legend: 1.00-1.79 – Never, 1.80-2.59 – Seldom, 2.60-3.39 – Sometimes, 3.40-4.19 – Often, 4.20-5.00 – Always

teachers and the school administration to ensure the success of the institution. When there is mutual positive intention and agreement on goals, teachers are more likely to be motivated and invested in their work. This can lead to a more supportive and productive work environment for everyone (Bosso, 2015).

Table 9 presents the perceptions of tertiary teachers and their superiors regarding the culture of innovation in their school. Both groups generally rate the various aspects of the culture of innovation as happening often. The average weighted mean (WM) for tertiary teachers is 4.02, and for superiors, it is 4.00, both falling within the "Often" range. Both teachers and superiors report that new ideas are

encouraged in the school, there is a cooperative and collaborative atmosphere, teachers are encouraged to be more open to new ideas and experiences, and they are provided with stimulating tasks that create a sense of personal growth. They also agree that decision-making does not stifle teachers who have different styles, and school officials welcome diverse ideas and opinions. Creative behavior is recognized by both groups, and school officials consistently let teachers try new ideas or strategies. However, there is a slight difference in their perceptions regarding the encouragement of communication among teachers, with teachers rating it as happening often and superiors rating it as always. Additionally, teachers and superiors differ in their views on

Table 10: Tertiary Teachers' Profile and Job Atmosphere

Job atmosphere		Age	Civil status	Gender	Number of teaching services	Educational attainment
Challenging Work	Correlation Coefficient	-.024	.037	.078	-.044	.041
	Sig. (2-tailed)	-.024	.037	.078	-.044	.041
	N	196	196	196	196	196
Freedom	Correlation Coefficient	-.017	-.006	-.083	.028	.015
	Sig. (2-tailed)	.818	.937	.271	.713	.840
	N	196	196	196	196	196
Organizational Encouragement	Correlation Coefficient	-.031	-.049	.044	.123	.206**
	Sig. (2-tailed)	.685	.516	.558	.102	.006
	N	196	196	196	196	196
Resources	Correlation Coefficient	.077	.227**	-.124	.188*	-.051
	Sig. (2-tailed)	.309	.002	.100	.012	.502
	N	196	196	196	196	196
Supervisory Encouragement	Correlation Coefficient	.045	.011	.040	-.001	.154*
	Sig. (2-tailed)	.548	.881	.596	.986	.041
	N	196	196	196	196	196
Work Group Support	Correlation Coefficient	.061	-.033	-.090	.195**	.106
	Sig. (2-tailed)	.417	.662	.235	.009	.159
	N	196	196	196	196	196
Organizational Independent	Correlation Coefficient	.028	.125	.007	.227**	.259**
	Sig. (2-tailed)	.708	.096	.931	.002	.001
	N	196	196	196	196	196
Innovation	Correlation Coefficient	-.024	.037	-.044	.036	.082
	Sig. (2-tailed)	.754	.627	.560	.637	.278
	N	196	196	196	196	196

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 11: Job atmosphere and innovation

	Job atmosphere	Innovation
Challenging Work	Pearson Correlation	.153*
	Sig. (2-tailed)	.042
	N	196
Freedom	Pearson Correlation	.147*
	Sig. (2-tailed)	.048
	N	196
Organizational Encouragement	Pearson Correlation	.310**
	Sig. (2-tailed)	.000
	N	196
Resources	Pearson Correlation	.186*
	Sig. (2-tailed)	.013
	N	196
Supervisory Encouragement	Pearson Correlation	.195**
	Sig. (2-tailed)	.009
	N	196
Work Group Support	Pearson Correlation	.082
	Sig. (2-tailed)	.276
	N	196

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

whether the school ensures creative teachers do not perform specific tasks all day long; teachers believe this happens often, while superiors think it only happens sometimes. The findings indicate a strong culture of innovation in the school, with both teachers and their superiors perceiving a supportive and encouraging environment for creativity and new ideas. According to [Castellote \(2017\)](#), innovation is the process of creating new ideas and putting them into practice. It is how creative ideas find their way into everyday practices. The basic steps in a typical innovation process include idea creation through spontaneous creativity, ingenuity, information processing, and initial experimentation to establish the ideas' potential value and application to produce a new product, service, or approach. Importantly, the innovation process is not complete until a final application has been achieved. A new idea, even if a great one, is not enough. The idea must pass through all stages of innovation before the value is realized.

[Table 10](#) illustrate that Civil status is significantly related to job atmosphere as to resources. Married teachers tend to have a better job atmosphere as to resources. Married individuals are family oriented; hence they are looking at the job atmosphere concerning resources (i.e., manpower, materials,

and opportunities). They would like to see some permanency as to tenure on their work. The number of teaching services is significantly related to job atmosphere, resources, workgroup support, and organizational independence. Teachers with more years of teaching service tend to have a better job atmosphere regarding resources, work group support, and organizational independence. Teachers with more years of teaching service already possess professional skills, have already developed camaraderie with fellow teachers, and are already experienced teachers; therefore, they tend to have more to share as far as innovation is concerned. Educational attainment is significantly related to organizational and supervisory encouragements and organizational independence. Teachers with higher educational attainment are more likely to have a better job atmosphere regarding organizational and supervisory encouragement and organizational independence. The teachers with higher educational attainment believed that practicing good management helps build and sustain enthusiasm for their work, and supportive supervisory practices empower the teachers to learn new ideas. Good management systems make it easier for teachers to do their work. [Deshpande \(2014\)](#) evaluated that a caring climate also had a significant indirect

impact on organizational commitment through the mediating role of job satisfaction and job performance through the mediating role of job satisfaction and organizational commitment. In addition, job satisfaction had a significant direct impact on organizational commitment, which also had a significant indirect impact on job performance (Santos 2020). Finally, organizational commitment had a significant direct impact on job performance.

Table 11 shows that job atmosphere in terms of challenging work, freedom, organizational encouragement, resources, and supervisory encouragement are significantly related to innovation. Complex, challenging, and interesting tasks and goals encourage essential motivation, which is a critical component of innovation; teachers must feel secure enough to forward their best ideas; support for new ideas by the supervisor is critical for the further development and implementation of these ideas. Especially supportive leaders who listen and give feedback on ideas; the perception of support from top management is important. This support entails both espoused support when top management communicates norms that encourage innovation, risk, and experimentation and enact support. Teachers who perceived their work as stimulating, enjoying autonomy, or empowering received support from supervisors and organization and were given opportunities to show creativity and adequate needed materials are most likely creative and willing to try new ideas and strategies. Martins and Terblanche (2003) stated that the determinants that influence creativity and innovation are strategy, structure, open communication, support mechanisms, behavior that encourages innovation.

CONCLUSION

Teacher's job is both stimulating and empowering, as it provides them with the opportunity to work harder and express their ideas. The school also offers a high degree of autonomy and encourages their growth and development. The school ensures that there are sufficient resources available to the teachers, including manpower, materials, and opportunities. The school's superiors believe that the culture of innovation is highly prevalent, with school officials allowing teachers to try out new ideas and strategies, such as project-

based learning, flipped classrooms, and the use of technology to enhance student engagement and performance. From the perspective of the teachers, they see evidence of this culture when their creative behavior is recognized and supported. Factors such as civil status, years of teaching experience, and highest educational attainment are significantly related to the job atmosphere in terms of resources, workgroup support, and organizational independence. Additionally, the job atmosphere in terms of challenging work, freedom, organizational encouragement, resources, and supervisory encouragement is significantly related to innovation. There is a noticeable difference in the perception of teachers and their superiors in terms of the job atmosphere in terms of freedom and supervisory encouragement. The superiors tend to have higher ratings on these aspects, possibly due to the fact that they are the subjects of the questions. The school where the respondents work is known for its emphasis on freedom for its constituents, and the superiors encourage their teachers to grow and develop as leaders. Continuing post-graduate studies is important for teachers not only for professional development, but also to stay current with modern trends in education. Public tertiary schools should focus on research in areas such as individual performance and school culture, which can lead to innovations and advancements for teachers, superiors, and students. These findings can be used to inform policy decisions related to faculty development, infrastructure development, and policy guidelines that will benefit the school, teachers, and superiors. To further enhance the innovation culture, schools should consider implementing innovative strategies that may improve student performance, such as personalized learning, collaborative problem-solving, and fostering a growth mindset among students. By doing so, schools can create a more dynamic and engaging learning environment that caters to individual student's needs and abilities. In addition, implementing a Tertiary Teachers' Human Capital Development Program can provide targeted training and support to help teachers develop their skills, knowledge, and innovative capacities. This program should focus on enhancing teachers' pedagogical skills, incorporating technology in the

classroom, and promoting collaboration among teachers to share best practices and innovative strategies. Such a program can contribute to the continuous improvement of the teaching environment and the overall innovation culture in public tertiary institutions. However, the study has some limitations, such as the sample size and the generalizability of the results. The findings may not be representative of all public tertiary institutions, and future research should expand the sample to include a wider range of institutions to enhance the generalizability of the results. Moreover, the study relied on self-reported data, which may be subject to biases and inaccuracies. Future research could use multiple sources of data, such as observations, interviews, and documentary analysis, to provide a more comprehensive understanding of the teaching environment and innovation in public tertiary institutions. Based on the study's findings and limitations, it is recommended that the university or school develop a program for promotions, awards, and incentives for faculty members who make extra efforts to achieve innovations that will benefit the university or school and its students. Additionally, implementing a Tertiary Teachers' Human Capital Development Program can help address the identified limitations and support the continuous improvement of the teaching environment and innovation culture. Future research should also explore the impact of different factors, such as leadership styles, organizational culture, and external factors, on the teaching environment and innovation in public tertiary institutions. This will provide a deeper understanding of the dynamics at play and inform the development of more effective strategies to enhance teaching and learning experiences in these institutions.

AUTHOR CONTRIBUTIONS

The author independently undertook the entire process of creating this paper. This includes developing the initial concept, conducting research, analyzing data, and writing the manuscript. The author also assumed responsibility for revisions and finalizing the paper, ensuring its accuracy and coherence. As such, the author is solely responsible for the content and overall quality of this work.

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CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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ABBREVIATIONS

- | | |
|----|---|
| * | Correlation is significant at the 0.05 level (2-tailed) |
| ** | Correlation is significant at the 0.01 level (2-tailed) |

AU	Araullo University
CHED	Commision on Higher Education
GNT	Gabaldon Campus
GT	General Tinio Campus
HERRC	Higher Education Regional Research Center
NEUST	Nueva Ecija University of Science and Technology
PHERNET	Philippine Higher Education Research Network
SIC	San Isidro Campus
SUCS	State Universities and Colleges
WM	Weighted Mean

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