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Modeling Network- Based Cad Checker Management System

Krizzie Joy D. Cailing,Ph.D

Cebu Technological University, Cebu City, Philippines.
Email: cailingkrizziejoy@gmail.com
Orchid Id number: 0000-0002-8465-9704
Corresponding Author: Nolasco K.Malabago, Ph.D.,Dev.Ed*

This study concentrates on creating and assessing a Network-Based Computer-Aided Drawing (CAD) Checker Management System at Cebu Technological University-Main Campus for 2023-2024. Based on the evaluation of ISO 25010 standards, examine the development process and measure acceptability through the Technology Acceptance Model (TAM). The research explores user demographics, technical requirements, and acceptability in line with ISO 25010 standards, utilizing a mixed-methods approach involving surveys and discussions for a thorough evaluation. Findings indicate a youthful user demographic with diverse academic backgrounds, showcasing strong acceptance across user categories. The system's technical aspects, encompassing design, content, and functionality, align with industry standards. The study recommends system integration, emphasizing its potential to enhance computer-aided drawing and instructional document management, fostering innovation and excellence at the university. The constructs used for assessment include perceived usefulness, perceived ease of use, behavioral intention to use, and actual system use within the TAM framework.

Keywords— Network- Based Cad Checker Management System, Technology Management, Cad Checker, Descriptive - Developmental Research.

I. INTRODUCTION

In a world where digital connectivity is essential, we're dedicated to equipping learners with 21st-century skills vital for their success. To achieve this, we use performance-based assessment, a method recognized for evaluating these skills. However, implementation faces challenges such as time constraints, lack of resources, and infrastructure. Educators are often discouraged by the effort needed to standardize scoring for complex tasks. This method also has potential for error due to cognitive limitations, and providing timely feedback is challenging, impacting students' academic self-esteem. In drafting and design, precision is crucial, traditionally relying on manual inspection prone to human error. To address this, a web-based automated checking system was developed, initially as a desktop application, for grading student drawings. The system evolved into a web-based approach with an improved user interface. The proposed platform aims to automate drafting plate inspection using technologies like Django, PostgreSQL, ReactJS, and OpenAI GPT-4, reducing time and

resources while enhancing quality. This research contributes to transforming design and engineering practices through network-based solutions**.**

Research Questions

The research project developed and evaluated a network-based CAD checker management system at Cebu Technological University's Main Campus for the Academic year 2023-2024. It assessed system quality according to ISO 25010 standards, analyzed the development process, and evaluated acceptability using the Technology Acceptance Model (TAM). Specifically, this sought answers to the following questions: What is the profile of the end user in terms of age, gender, and courses? What are the technical requirements of a network-based CAD checker management system developed in terms of features, design, content, and process acquisition, release, storage, monitoring, and evaluation? Based on the Technology Acceptance Model, what is the acceptability level as perceived by the respondent groups in terms of perceived usefulness, perceived ease of use, behavioral intention to use, and actual system use? To what extent does the acceptability level of the developed system align with ISO 25010 software quality standards, specifically concerning factors like functional suitability, performance efficiency, compatibility, usability, reliability, and security? Is there a significant degree of correlation between the perceptions of the respondent groups on the acceptability of the network-based CAD checker management system towards the developed system software quality standards? Based on the findings, what technology adoption can be proposed?

Methodology

This research employed a mixed-methods approach to evaluate CTU's network-based CAD checker management system, combining quantitative surveys on ISO 25010 standards with qualitative discussions on system features and development processes. Participants included chairpersons, faculty, and students of relevant courses. Modified questionnaires based on the Technology Acceptance Model (TAM) and ISO 25010 were used to gather insights into user acceptance and system quality. The study sought permission from CTU and other institutions to conduct the research, distributing questionnaires via email to ensure prompt responses and data confidentiality. Data analysis involved both quantitative and qualitative methods to validate hypotheses and inform system development.

Results and Discussion

I. Demographic Profile of the Respondents

The demographic attributes of the participants encompass their age, gender, and course. The data from the Network-Based CAD Checker Management System study reveals insightful patterns among the respondents' age groups. Half of the participants (50%) fall within the 18 to 24 age categories, indicating a significant presence of younger individuals. The next age group, 25 to 34 years old, accounts for 28.33% of the sample, while those aged 35 to 44 constitute 20%. Respondents aged 45 and above make up a smaller proportion, at 1.67%. This distribution suggests a concentration of participants in the younger age brackets, potentially influencing the system's user demographics. The gender distribution among respondents is

balanced, with 55% identifying as male and 45% as female, indicating a diverse sample. Most participants have a Bachelor of Science in Civil Engineering (28.33%), followed closely by those with a Bachelor of Science in Aeronautical Engineering (25%). Mechanical Engineering and Architecture are also well-represented, accounting for 21.67% and 16.67% of the respondents, respectively. Participants with a background in Computer Engineering constitute 8.33% of the total. This diverse distribution underscores the interdisciplinary nature of the study, suggesting that the CAD Checker Management System is relevant across various engineering and architectural fields.

II. Development of the Network-Based CAD Checker Management System

Features

This section emphasized the two sub-features, which are the design and content. The figure shows that the implementation view of the automated instruction cad checker management system was based on web development frameworks.

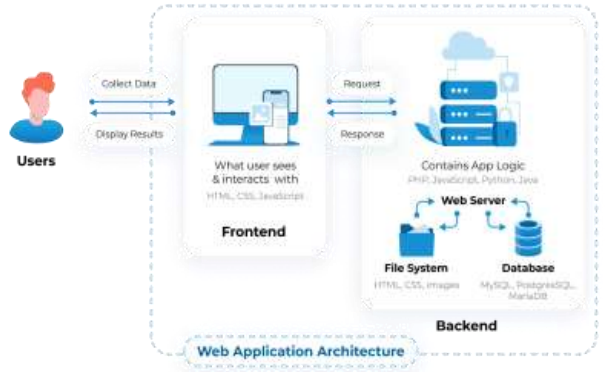

Fig 1. Automated Cad Checker Management System Implementation View

Design and Content

The design and content of a management system are crucial in its development, serving as the framework for overall performance. Technological advancements, combined with scientific innovations, play a significant role in information strengthening and development (Manimaran S. et al., 2016). Understanding what constitutes an effective website is essential, as it serves as a platform for schools to innovate in teaching and learning while aligning with institutional dynamics (Taddeo and Barnes, 2016). Additionally, factors influencing end-user interest in using the developed automated CAD checker management system were evaluated to select appropriate design and content.

Fig 2. Automated Cad Checker Management System ProfilePage

Django facilitates rapid web app development in Python, with Django Rest Framework adding features like serialization and authentication for powerful Web APIs. PostgreSQL, supported by Django, offers a reliable open-source database system with advanced query capabilities, forming a comprehensive stack for Python web development. The client-server model allows clients to subscribe to different channels for notifications on specific events. React is a JavaScript library for building user interfaces with components, maintained by Meta. Redux, often used with React, manages state predictably in JavaScript applications. GitHub, a web-based Git platform, organizes code and fosters collaboration with features like branching and pull requests. Visual Studio Code is a versatile, free code editor with extensive customization options and built-in Git support. GPT-4 is a large-scale, multimodal model developed in March 2023, exhibiting human-level performance on various benchmarks.

Process

This section refers to the functionality of the developed Automated Cad Checker Management System. Details of how the developed system emphasizes system requirements on acquisition and retrieval, storage, monitoring, and computer aided drawing evaluation were discussed in this area.

Acquisition and Retrieval

A.Cannu-Miro's (2016) highlights that user interaction and convenience, such as online submissions, uploading, and retrieval based on search criteria, greatly influence the acceptability of automated systems. Advanced web technology has enabled educators to use the web as a new channel for delivering educational and instructional materials (Harris and Martin, 2012; Otter et al., 2013).

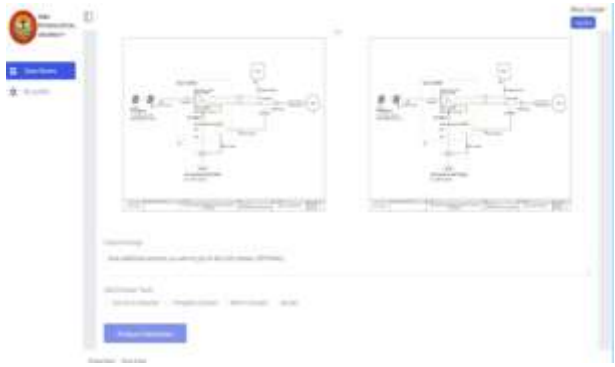

Fig 3. Automated Cad Checker Management System

The research focused on defining the technical requirements for a network-based CAD checker management system. It highlighted the importance of secure user authentication, access control, data import functionality, and version control. The system should implement secure login mechanisms, define user roles and permissions, support importing CAD files in various formats, manage different versions of CAD files, enable controlled release of updates, implement an approval workflow for CAD file releases, and include a notification system for timely information dissemination.

Storage

The selection of a database management system (DBMS) is an important design consideration. DBMSs are either shared file-based or client/server databases, Lovell, N. H., Magrabi, F., Celler, B. G., Huynh, K., & Garden, H. (2001). Information surrounds us in various forms, generating vast amounts daily across diverse formats (Kubina, M., Varmus, M., & Kubinova, I., 2015). Storage solutions must adapt to the speed and diversity of data. Velocity is crucial concerning query latencies—how quickly one receives a response to a query. This becomes especially pertinent in handling high incoming data rates (Strohbach, M., Daubert, J., Ravkin, H., & Lischka, M., 2016).

Fig.3 presents that a paperless and hassle-free checking would mean an electronic repository or bank for computer-aided drawing. The system was intentionally designed to collect files in PNG, JPG, JPEG, and web form to be queried and processed fast by the server. Thus, it will be capable of processing many drawings simultaneously. The research highlighted the importance of secure file storage for CAD files, emphasizing the need for proper backup and redundancy measures. It also recommended the use of a database management system (DBMS) such as MySQL or PostgreSQL for storing metadata and other relevant information. Additionally, the implementation of data encryption mechanisms was suggested to protect CAD files and sensitive data from unauthorized access. Scalability was identified as another critical factor, requiring the system to be capable of handling large amounts of CAD data effectively.

Monitoring

The research identified key aspects related to monitoring in a network-based CAD checker

management system. It highlighted the importance of system health monitoring to ensure overall system performance, including monitoring CPU, memory, and disk usage, as well as detecting potential issues or errors. The research also emphasized user activity monitoring to track interactions and ensure compliance with policies. Lastly, logging and auditing system activities were deemed crucial for compliance, troubleshooting, and forensic analysis in case of incidents.

Evaluation

The technical requirements for a network-based CAD checker management system focused on evaluation, particularly the "Analyze Submission" feature, which included a module for analyzing CAD files to ensure adherence to design standards. It provided detailed reports on errors or discrepancies found. The "Custom Prompt" feature allowed personalized instructions for file submissions, ensuring clarity. "Cad Checker Tools" comprised tools for checking dimensions, alignments, and geometric accuracy.

ACCEPTABILITY LEVEL OF THE MODEL NETWORK-BASED CAD CHECKER MANAGEMENT SYSTEM BASED ON TECHNOLOGY ACCEPTANCE MODEL

Perceived Usefulness

Davis defined perceived usefulness as the extent to which an individual believes a technology would enhance work performance, and perceived ease of use as the extent to which they believe using it would be effortless (Alshammari et al., 2016). The table summarizes user perceptions of the Network-Based CAD Checker Management System (NBC-CMS) through the Technology Acceptance Model. Users, including Students, Professors/Faculty, and Chairpersons, highly agree that NBC-CMS improves efficiency in data acquisition for drawing approvals, facilitates data location and retrieval, and enhances convenience and workflow optimization. Additionally, it was noted for making it easier to track and monitor drawing approval statuses, highlighting its effectiveness in management tasks.

Perceived Ease of Use

The table provides a comprehensive view of the acceptability level of the Network-Based CAD Checker Management System (NBC-CMS) concerning the Technology Acceptance Model, with a specific focus on perceived ease of use. The responses across all user categories indicate a high level of agreement on various aspects related to the ease of use of the NBC-CMS. Users strongly agree that learning to operate the system would be straightforward, suggesting that it is perceived as user-friendly and easy to grasp.

Furthermore, respondents express confidence in effortlessly locating necessary information while using the NBC-CMS, aligning with their expectations of a user-friendly system. The anticipation of a clear and intuitive user interface reinforces the positive perception of the system's ease of use. An interesting observation is the recognition of the NBC-CMS's flexibility for interaction, mainly through its easy-to-use update buttons. This aligns with the overall theme of the system being user-friendly and adaptable to user needs.

The calculated Average Weighted Mean of 3.71 supports the overall strong agreement among users regarding the perceived ease of use. The verbal description categorizes this score

as "Strongly Agree," indicating a collective belief that the NBC-CMS is user-friendly and aligns well with user expectations. This finding emphasizes the system's positive user experience and usability within the academic and administrative context.

Behavioral Intention to Use

The responses across all user categories indicate a high agreement regarding various aspects of the behavioral intention to use the NBC-CMS. Users strongly agree that they clearly understand the system's functionality, suggesting a confident understanding of its features and capabilities.

Furthermore, respondents express a unanimous belief in the system's ability to protect user privacy, instilling confidence in the reliability of the NBC-CMS. The perceived risk-free nature of using the system is emphasized, contributing to a positive attitude toward its adoption. An important aspect is the respondents' confidence in keeping the NBC-CMS under control, highlighting their perceived ease in managing and navigating the system. This collective sentiment reinforces users' positive behavioral intention to use the NBC-CMS.

The calculated Average Weighted Mean of 3.71 supports the overall strong agreement among users regarding the behavioral intention to use the NBC-CMS. The verbal description categorizes this score as "Strongly Agree," indicating a collective belief in the system's functionality, reliability, and user-friendly nature. This finding underscores the positive user perception and intention to utilize the NBC-CMS in academic and administrative contexts.

Actual NBC-CMS Use

The responses across all user categories demonstrate a strong agreement regarding using NBC-CMS. Users' express confidence in their capability to use the system, highlighting a perceived ease of operation and proficiency among all user groups.

Additionally, respondents indicate that using the NBC-CMS is an enjoyable experience, suggesting a positive and engaging user interaction. The perception that utilizing the system provides a competitive advantage over those who do not is a notable finding, emphasizing the perceived benefits and advantages associated with the NBC-CMS.

Furthermore, users find the experience of using the NBC-CMS rewarding, indicating a positive impact on user satisfaction. The collective sentiment is that utilizing the NBC-CMS is considered a good idea, underscoring the positive reception and acceptability of the system among the user groups.

The calculated Average Weighted Mean of 3.71 supports the overall strong agreement among users regarding using the NBC-CMS. The verbal description categorizes this score as "Strongly Agree," signifying a unanimous belief in the system's capability, enjoyment, advantages, and overall positive impact on user experience. This finding reinforces the favorable acceptability of the NBC-CMS for actual use within the academic and administrative context.

SUMMARY

The summary table evaluates the Acceptability Level of the Developed Model, the Network-

Based CAD Checker Management System (NBC-CMS), through the Technology Acceptance Model (TAM). Users, including Students, Professors/Faculty, and Chairpersons, highly agree that the NBC-CMS is beneficial and significantly enhances efficiency in drawing approval processes. Users also strongly agree that learning to operate the NBC-CMS is straightforward and that they have a solid inclination to use it. Additionally, respondents overwhelmingly agree that they can use the NBC-CMS, with a strong consensus among users and low Standard Deviation values, indicating robust findings. Overall, users find the NBC-CMS highly acceptable and aligned with their expectations, with an overall Average Rating signifying a Verbal Description of "Strongly Agree."

Table1. Summary of the Acceptability Level Of the Developed Model Network-Based Cad Checker Management System On Technology Acceptance Model

Students	**Professors/ Faculty**	**Chairpersons**	**OVERALL**	
			Average	**Verbal Description**
3.73	3.70	4.00	**3.81**	Strongly Agree
3.60	3.54	4.00	**3.71**	Strongly Agree
3.64	3.51	4.00	**3.71**	Strongly Agree
3.70	3.57	4.00	**3.71**	Strongly Agree
3.58	**3.67**	**4.00**	**3.75**	**Strongly Agree**
0.12	**0.10**	**0.00**	**0.09**	
Strongly Agree	**Strongly Agree**	**Strongly Agree**	**Strongly Agree**	

THE LEVEL OF ACCEPTABILITY OF THE MODEL NETWORK-BASEDCADCHECKER MANAGEMENT SYSTEM ALIGNS WITH ISO 25010 SOFTWARE QUALITY STANDARDS

Functional Suitability

The table assesses the Level of Acceptability of the Network-Based CAD Checker Management System concerning the ISO 25010 Software Quality Standards, explicitly focusing on Functional Suitability. The responses from Students, Professors/Faculty, and Chairpersons indicate a high degree of alignment with the standards, as reflected in the Average Weighted Mean of 3.75, supporting a Verbal Description of "Strongly Agree."Under Functional Suitability, the system excels in various aspects. Firstly, concerning Functional Completeness, users across all categories strongly agree that the system covers all specified tasks and user objectives. The robust agreement is evident in the Average Ratings, ranging from 3.67 to 4.00.

Secondly, regarding Functional Correctness, the system receives strong affirmation from

users, who agree that it provides correct results with the required precision. This is consistent across user categories, with Average Ratings ranging from 3.49 to 4.00. Thirdly, Functional Appropriateness is highlighted, with users expressing strong agreement that the system facilitates accomplishing specified tasks and objectives. Average Ratings across user categories range from 3.67 to 4.00.

The overall Average Weighted Mean of 3.75 reflects the users' collective view that the Network-Based CAD Checker Management System aligns well with ISO 25010 Software Quality Standards, particularly in Functional Suitability. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" underscore the system's adherence to these quality standards, suggesting its effectiveness and appropriateness for the specified tasks and objectives.

Performance Efficiency

The table evaluates the level of acceptability of the network-based CAD checker management system concerning the ISO 25010 software quality standards, specifically focusing on performance efficiency. The responses from Students, Professors/Faculty, and Chairpersons indicate a strong alignment with the standards, as reflected in the Average Weighted Mean of 3.83, supporting a Verbal Description of "Strongly Agree."Regarding Time Behavior, users unanimously agree that the system's response processing times and throughput rates when performing its functions meet the required standards. This consensus is evident across all user categories, with Average Ratings ranging from 3.67 to 4.00. Regarding Resource Utilization, users strongly agree that the system's amounts and types of resources used when performing its functions meet the specified requirements. The Average Ratings are consistently high, ranging from 3.71 to 4.00 across user categories. For Capacity, users collectively agree that the system's maximum limits of parameters meet the required standards. Again, this consensus is evident in the Average Ratings, ranging from 3.77 to 4.00.

The overall Average Weighted Mean of 3.83 reinforces the users' collective perception that the Network-Based CAD Checker Management System aligns strongly with ISO 25010 Software Quality Standards, particularly in Performance Efficiency. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" underscore the system's effectiveness in terms of time behavior, resource utilization, and capacity, indicating its efficiency and reliability in meeting performance requirements.

Compatibility

The table assesses the Level of Acceptability of the Network-Based CAD Checker Management System with ISO 25010 Software Quality Standards, explicitly focusing on Compatibility. The responses from Students, Professors/Faculty, and Chairpersons collectively indicate a strong alignment with the standards, with an Average Weighted Mean of 3.86, supporting a Verbal Description of "Strongly Agree." Regarding co-existence, users agree that the system can effectively execute its designated functions, operate in a shared environment, and utilize common resources with other products, avoiding any adverse impacts. Any detrimental impact on those products. The Average Ratings for Co-existence are consistently high, ranging from 3.71 to 4.00 across user categories.

Regarding Interoperability, users also strongly agree that the system can exchange information and effectively use the information that has been exchanged. The Average Ratings for Interoperability are consistently high, ranging from 3.77 to 4.00 across user categories. The overall Average Weighted Mean of 3.86 underscores the users' collective perception that the Network-Based CAD Checker Management System aligns strongly with ISO 25010 Software Quality Standards, particularly in Compatibility. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" highlight the system's effectiveness in co-existing with other products and its ability to seamlessly exchange information, affirming its compatibility with diverse environments and systems.

Usability

The table evaluates the Level of Acceptability of the Network-Based CAD Checker Management System concerning ISO 25010 Software Quality Standards, focusing on the Usability factor. Users, including Students, Professors/Faculty, and Chairpersons, strongly align with these standards, with an Average Weighted Mean of 3.82 and a Verbal Description of "Strongly Agree. “Regarding Appropriateness Recognizability, respondents unanimously agree that the system allows them to recognize its appropriateness for their needs—the Average Ratings for this attribute range from 3.66 to 4.00 across user categories.

In this area of Learnability, users strongly agree that the system can be effectively learned by specified users to achieve specified goals, emphasizing its efficiency, freedom from risk, and satisfaction, which are prioritized within a specified context of use. The Average ratings for learnability are consistently high, ranging from 3.69 to 4.00 across user categories. For Operability, User Error Protection, User Interaction Aesthetics, and Accessibility, users across all categories strongly agree that the system possesses attributes that make it easy to operate, protects against user errors, provides aesthetically pleasing interaction, and can be used by people with a wide range of characteristics and capabilities. The Average Ratings for these attributes consistently range from 3.69 to 4.00 across user categories. The overall Average Weighted Mean of 3.82 underscores the users' collective perception that the Network-Based CAD Checker Management System aligns strongly with ISO 25010 Software Quality Standards, particularly in the realm of Usability. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" highlight the system's effectiveness in ensuring appropriateness, recognizability, learnability, operability, user error protection, user interaction aesthetics, and accessibility, contributing to a positive and user-friendly experience.

Reliability

The evaluation of the Network-Based CAD Checker Management System's acceptability against ISO 25010 Software Quality Standards, focusing on reliability, reveals a robust alignment with user expectations. Users, including Students, Professors/Faculty, and Chairpersons, collectively express a strong agreement, as evidenced by an impressive Average Weighted Mean of 3.75 and an overarching Verbal Description of "Strongly Agree. “Regarding Maturity, respondents unanimously acknowledge that the system meets reliability needs under regular operation, with consistent Average Ratings ranging from 3.67 to 4.00 across user categories.

Furthermore, users' express confidence in the Recoverability of the system, indicating a belief that it can efficiently recover data directly affected and re-establish the desired state. The consistently high Average Ratings for Recoverability, ranging from 3.51 to 4.00 across user categories, underscore the system's effectiveness in rebounding from adverse situations. The overall Average Weighted Mean of 3.75 reinforces the users' collective perception that the Network-Based CAD Checker Management System aligns strongly with ISO 25010 Software Quality Standards, particularly regarding reliability. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" emphasize the system's maturity, fault tolerance, and recoverability, positioning it as a dependable solution across diverse operational scenarios.

Security

Evaluating the Network-Based CAD Checker Management System's acceptability, aligning with ISO 25010 Software Quality Standards in security, reflects a resounding consensus among users. Students, Professors/Faculty, and Chairpersons exhibit a robust agreement, evidenced by an impressive Average Weighted Mean of 3.75 and an overarching Verbal Description of "Strongly Agree."Regarding Confidentiality, users unanimously acknowledge the system's commitment to restricting data access to authorized individuals, with Average Ratings ranging from 3.70 to 4.00 across user categories. This underscores the system's effective measures to safeguard sensitive information. In terms of Integrity, users firmly believe that the system adeptly prevents unauthorized access or modification of computer programs and data. Average Ratings for Integrity, ranging from 3.54 to 4.00 across user categories, underscore the system's ability to maintain the integrity of crucial information and functionalities.

Moreover, users demonstrate confidence in the Non-repudiation aspect, affirming that events or actions within the system can be conclusively proven and are irrefutable. Consistently high Average Ratings for Non-repudiation, ranging from 3.51 to 4.00 across user categories, highlight the system's capacity to provide undeniable evidence of actions or events. The overall Average Weighted Mean of 3.75 solidifies the users' collective perception that the Network-Based CAD Checker Management System strongly aligns with ISO 25010 Software Quality Standards, particularly regarding security. The consistently high Average Ratings and the Verbal Description of "Strongly Agree" underscore the system's efficacy in ensuring confidentiality, integrity, and non-repudiation, positioning it as a secure solution for handling sensitive data and maintaining the trustworthiness of the system.

Summary

The summary illustrates the acceptability level of the Network-Based CAD Checker Management System in alignment with ISO 25010 Software Quality Standards across crucial factors. Students, Professors/Faculty, and Chairpersons consistently demonstrate a strong agreement, emphasizing the system's adherence to rigorous quality standards. In terms of Functional Suitability, the system receives commendable ratings, with an Overall Average of 3.75, indicating a robust alignment with specified tasks and user objectives. The Verbal Description of "Strongly Agree" characterizes this, reinforcing users' confidence in the system's comprehensiveness.

Furthermore, performance efficiency stands out with an Overall Average of 3.83, highlighting the system's efficient response times and resource utilization. Users unanimously agree on the system's ability to meet performance requirements, as indicated by the Verbal Description of "Strongly Agree."Compatibility achieves an Overall Average of 3.86, signifying users' satisfaction with the system's co-existence and interoperability in shared environments. The Verbal Description of "Strongly Agree" emphasizes the system's capability to perform efficiently alongside other products. Usability, reflected in an Overall Average of 3.82, underscores users' positive experiences regarding appropriateness, learnability, and user interface attributes. The Verbal Description of "Strongly Agree" reinforces users' belief in the system's user-friendly nature. Reliability and Security both attain an Overall Average of 3.75, demonstrating the system's maturity, fault tolerance, and robust measures to ensure confidentiality, integrity, and non-repudiation. Users strongly agree on the system's reliability and security, contributing to the overall positive perception.

The Mean of Means, calculated at 3.79, signifies a consistently strong agreement across all factors. Standard Deviations are minimal, indicating a high degree of consensus among user groups. In summary, the Network-Based CAD Checker Management System's acceptability aligns comprehensively with ISO 25010 Software Quality Standards. The consistent "Strongly Agree" ratings across diverse factors reflect users' confidence in the system's functional suitability, performance efficiency, compatibility, usability, reliability, and security. This robust alignment positions the system as a highly acceptable and reliable solution within the specified contexts of use.

Table 2. Summary Of the Acceptability Level Of The Model Network-Based Cad Checker Management System Aligns With Iso 25010 Software Quality Standards

Acceptability Level	**Students**	**Professors/ Faculty**	**Chairpersons**	**OVERALL**	
				Average	**Verbal Description**
Functional Suitability	3.67	3.57	4.00	3.75	Strongly Agree
Performance Efficiency	3.78	3.72	4.00	3.83	Strongly Agree
Compatibility	3.83	3.74	4.00	3.86	Strongly Agree
Usability	3.75	3.70	4.00	3.82	Strongly Agree
Reliability	3.67	3.57	4.00	3.75	Strongly Agree
Security	3.66	3.58	4.00	3.75	Strongly Agree
Mean of Means	**3.73**	**3.65**	**4.00**	**3.79**	**Strongly Agree**
Standard Deviation	**0.071**	**0.04**	**0.00**	**0.04**	

Verbal Description	**Strongly Agree**	**Strongly Agree**	**Strongly Agree**	**Strongly Agree**	
Legend: 3.26-4.00 Strongly Agree;2.51-3.25 Agree;1.76-2.50 Disagree;1.0-1.75 Strongly Disagree					

THE SIGNIFICANT DEGREE OF CORRELATION BETWEEN THE PERCEPTIONS OF THE RESPONDENT GROUPS ON THE ACCEPTABILITY OF THE NETWORK-BASED CAD CHECKER MANAGEMENT SYSTEM TOWARDS THE DEVELOP SYSTEM SOFTWARE QUALITY STANDARDS

In assessing the correlation between the perceptions of various respondent groups regarding the acceptability of the Network-Based CAD Checker Management System in alignment with the developed system software quality standards, a Pearson correlation coefficient (r) of 0.66756 was obtained. The associated Z-score was 1.39662, and the p-value (H0: $r \leq 0$) was calculated as 0.081262. The 95% confidence interval ranged from -0.3142 to 0.9594, with a right-sided interval of -0.1423 to +1 and a left-sided interval of -1 to 0.9421. The least-squares regression line was determined as $y = 0.01704661 \cdot x + 3.7508872$.

Furthermore, in interpreting these results, the p-value of 0.081262 is more significant than the commonly chosen significance level of 0.05 (alpha). Hence, there is inadequate evidence to dismiss the null hypothesis. (H0). Therefore, the correlation is deemed statistically insignificant. This implies that, based on the available data, there is no significant degree of correlation between the perceptions of respondent groups on the acceptability of the Network-Based CAD Checker Management System to the developed system software quality standards. Thus, the null hypothesis (H0) is Fail to Reject

Conclusion

In conclusion, these findings emphasize the pressing need for Cebu Technological University-Main Campus to integrate the proposed Network-Based CAD Checker Management System into its academic infrastructure. The study has revealed substantial insights into the deficiencies within the current processes of acquiring and retrieving, storing, monitoring, and evaluating faculty syllabi. The developed system demonstrates high acceptability, particularly in its design implementation. While challenges may arise during the implementation phase, the study recommends targeted orientations and training activities to overcome these obstacles. Embracing the proposed system promises to significantly enhance the efficiency and effectiveness of the university's instructional document management, aligning with ISO 25010 software quality standards. This strategic adoption is envisioned to contribute to a more streamlined and technologically advanced educational environment, fostering a culture of innovation and excellence at Cebu Technological University-Main Campus. Based on the findings and conclusion of the study, technology adoption of the developed Network Network-Based CAD Checker Management System is recommended.

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Conflict of interest:

The authors declare that there is **no conflict of interest".**

REFERENCES

[1] Abdulwahab, S., & Usman, A. (2014). Competencies required by technical drawing teachers in technical colleges. Journal of Research & Method in Education, 4(2), 32-37.
[2] Aquino, R. (2018). Development of Computer-Based Tests Mode of Assessment for Technical Drafting Students. Journal of Advanced Studies, 1(1), 1-3.
[3] Breedveld, Ruud. "Samenwerken En Keteninformatisering in De Zorg − Een Verkennende Studie." 2016, https://core.ac.uk/download/pdf/74509462.pdf.
[4] Bulgurcu, B., Cavusoglu, H., & Benbasat, I. (2010). Information security policy compliance: An empirical study of rationality-based beliefs and information security awareness. MIS Quarterly, 34(3), 523-548.
[5] Chedi, J. M. (2015). Technical drawing/graphic skills acquisition for teaching and learning and challenges in technology education. ATBU Journal of Science, Technology and Education, 3(3), 128-133.
[6] Citation audit. https://www.windowstips.net/2022/02/how-to-calculate-weighted-average-in.html
[7] Deo (2010). AutoCAD Grading Application: Back End. (Master's thesis, San Diego State University, 2010). San Diego
[8] Elom, E. N. (2014). Effective Teaching and Learning in Technical Colleges: Challenges of Technical Drawing. Journal of Educational Policy and Entrepreneurial Research, 1(1), 76-86.
[9] Finnell, J. (2013). Records Management Theory's Dilemma. Records Management Journal, 23(2), 122-139.
[10] Halim, L., Yasin, R. M., & Ishar, A. (2012). Camed: An innovative communication tool in teaching engineering drawing. WSEAS Transactions on Information Science and Applications, 9(2), 58-67.
[11] http://iso25000.com/index.php/en/iso-25000-standards/iso-25010
[12] https://dotakeaction.org/tuition-free-project-management-course-with-open-university-uk/
[13] https://mypublicpost.com/best-ides-for-wordpress-development-in-2022/
[14] Ingale, S. S. (2017). Development of CAD Platform Independent Software for Automatic Grading of Technical Drawings (Doctoral dissertation, Virginia Tech).
[15] ISO 25000. (2018). ISO/IEC 25010. Retrieved February 6, 2019, from
[16] ISO/IEC 25010 Software Quality Standard. https://thetechnologyvault.com/iso-25010-software-quality-standard

[17] Jansen, B. J., & Rieh, S. Y. (2010). The seventeen theoretical constructs of information searching and information retrieval. Journal of the American Society for Information Science and Technology, 61(8), 1517-1534.
[18] Karna, S. T. (2012). Enhanced AutoCAD Grading Application: Backend Component (Unpublished master's thesis). San Diego State University.
[19] Manning, C. D., Raghavan, P., & Schütze, H. (2008). Introduction to information retrieval. Cambridge University Press.
[20] Mojibur Rohman, M., Sudjimat, D. A., Sugandi, M., & Nurhadi, D. (2019). Developing an interactive digital book to improve the technical drawing abilities of mechanical engineering students. Global Journal of Engineering Education, 21(3), 239-244.
[21] Nematovich, V. A. Z., & Karimberdiyevich, S. S. (2022). Teaching perspective based on innovative technologies.
[22] Obaid, F. (2014). Pedagogical & Didactical Innovations Evaluation and Assessment of Students Learning. Museums and Art Galleries of the Northern Territory Research, 2(5), 1-7. doi: dx.doi.org/14.9831/1444-8939.2014/2-5/MAGNT.1
[23] Obilor, E. I., & Amadi, E. C. (2018). Test for significance of Pearson's correlation coefficient. International Journal of Innovative Mathematics, Statistics & Energy Policies, 6(1), 11-23.
[24] Oyebode, O. J., Adebayo, V. B., & Olowe, K. O. (2015). Assessment of the use of AutoCAD package for teaching and learning engineering drawing in Afe Babalola University Ado-Ekiti. Assessment Of The Use Of Autocad Package For Teaching And Learning Engineering Drawing In Afe Babalola University Ado-Ekiti, 4(9), 1-8.
[25] Quelhas, Rosário, et al. "Contribution of ICT to Improve Learning of People with Special Educational Needs: A Comparative Perspective between Public School and Private School." 2018, https://doi.org/10.3390/proceedings2211281.
[26] Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press
[27] Rosaroso, R. C., & Rosaroso, N. A. (2015). Performance-based Assessment in Selected Higher Education Institutions in Cebu City, Philippines. Asia Pacific Journal of Multidisciplinary Research, 3(4), 2015th ser., 72-77
[28] Schotte, Simone. "Poverty, Social Mobility, and the Middle Class: The Case of South Africa." 2018, https://doi.org/10.53846/goediss-7077.
[29] Tuckwiller, B. L., (2012). Teacher Perspectives on Performance Based Student Assessment in Career and Technical Education in West Virginia, Public Schools Theses, Dissertations and Capstones. Paper 313.
[30] Zhang, M. (2013). Contrasting Automated and Human Scoring of Essays. Educational Testing Service, 21. Retrieved February 6, 2019, fromhttp://origin-