

# An evaluation of the Institutional Plagiarism Scanning Service (IPSS) Academic Year 2015-2016 and 2016-2017

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## ABSTRACT

*Numerous studies are dealing with plagiarism issues and detection, but there are limited studies that cover the evaluation of plagiarism scanning platforms in higher education institutions. The study assessed the Institutional Plagiarism Scanning Service (IPSS) of the University of the Assumption for AY 2015-2016 and AY 2016-2017, through the lens of implementers and thesis writers. Through mixed-method via convergent design utilizing interviews and questionnaires, a total of 103 thesis writers and two IPSS staff participated in the study. An in-house self-assessment via interview was employed to assess the insights of the two participants, and evaluative questionnaires were administered to the thesis and dissertation writers regarding the IPSS processes and systems. The study reviewed and described the policies and procedures in the management and operation of the program, identified the limitations and concerns in the first two years of implementation, and determined the degree of satisfaction of thesis and dissertation writers on the service rendered. Findings show high student satisfaction and community acceptance on the two-year IPSS implementation, and it is considered not just a deterrent but also an effective platform in ensuring integrity and ethics in research. The procedures and processes, however, may be streamlined for seamlessness and efficiency. The provider may also consider special scanning features such as grammar check and other necessary features as part of technology enhancement.*

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**Key words:** evaluate, service, plagiarism

## INTRODUCTION

***“When you have the wit of your own, it’s a pleasure to credit other people theirs.”  
(Criss Jami, 2015)***

Plagiarism is derived from the Latin word ‘plagiarus,’ which means theft or abduction (Sharma, 2010). The word was first used in the 16<sup>th</sup> century by a Roman martial referring to a thief or a plunderer.

In this modern world of technology, where information is widely disseminated, explored, and accessible via the internet, plagiarism has become a problematic phenomenon since it has been practiced by many uncalled writers (Anderson & Steneck, 2011). Plagiarism is stealing the intellectual prowess of original authors by merely copying words or ideas from someone else’s work without properly citing the source (Sharma, 2010). Concomitantly, it is the “copy and paste” syndrome committed by students in writing papers in compliance with an academic requirement. Studies show that the majority of students in the academe have somehow plagiarized at one point in their life (Maina, Maina, & Jauro, 2014; Park, 2003). To date, information technology has turned plagiarism into a serious problem for many publishers (Maurer, Kappe, & Zaka, 2006). Writers commit fraud and become literary thieves in the world of academic research (Khaled, 2013).

One of the primary factors why students plagiarize is their poor language skills or the ability to express their own words and ideas in the form of writing (Handa & Power, 2005). According to a study, plagiarism is based on socio-cultural and psychological perspectives (Gu & Brooks, 2008). Students using a new language or unfamiliar discourse and who are still adapting in the academic environment requires a deeper and extensive review of the literature to ease emotional tensions while writing to improve their ability (Knowlton & Collins, 2017). Meanwhile, many struggling students or beginning researchers are not fully aware of the depth of proper citation of sources (Sharma, 2010). It may be attributed to their lack of motivation and desire to create a better manuscript, and the drive to excel in the field of writing or possible that they did not learn how to paraphrase in their language classes.

The art of paraphrasing is an essential endeavor in writing which addresses plagiarism in writing. Paraphrasing includes changing grammar, similar meaning words, re-ordering sentences in original work, or merely restating the same contexts in different words (Barry, 2006; Maurer et al., 2006; People, 2014).

With the rampant plagiarism malpractices, which promotes dishonesty and immoral intellectual thievery among authors, the call for an awakening campaign to increase students’ awareness is prioritized by every academic institution (Maina et al., 2014). In view thereof, policies and guidelines in higher education institutions as well as in basic education institutions regarding plagiarism are now strictly implemented to promote academic integrity and honesty

(Park, 2003). If technology has contributed to breeding plagiarism, it can also be a tool in detecting plagiarized works (Johnson, Patton, Bimber, Almeroth, & Michaels, 2004). Digital identification of plagiarized statements may offer necessary changes and revision to one's work. This technological revolution has shaped a niche for fast and reliable plagiarism-detection software (Braumoeller & Gaines, 2001). There many forms of automatic plagiarism detection that have been engineered and aimed at providing seamless analysis and review of vital documents (Barrón-Cedeño, Potthast, Rosso, Stein, & Eiselt, 2010).

Hence, the University of the Assumption (UA) in observance of ethics in writing research has established the Institutional Plagiarism Scanning Service (IPSS). Besides being a deterrent, this plagiarism scanning service platform promotes student's honesty and trustworthiness in the conduct of research and is anchored on the three-fold institutional graduate attributes: *Biasa* (academically competent), *Maganaca* (morally upright) and *Mayap* (socially responsible). To publish faculty and students' scholarly papers, they are encouraged to observe the code of ethics on thesis writing strictly and improve the quality of research output in terms of proper citations and paraphrasing.

This online plagiarism software can screen and scan multiple research manuscripts in a day. In ensuring academic integrity and professionalism and in the observance of ethics in research, this online scanning mechanism aims to ensure that all research outputs/write-ups of students and teachers are clear of plagiarism. All researchers, both in the undergraduate and graduate school, are to submit their write-ups of their thesis/dissertation to plagiarism review, before any final oral defense and submission of a manuscript for publication or conference paper presentation for that matter. After a thorough plagiarism review, a certificate is issued, certifying that the manuscript is free of plagiarism. The final stage is the nodding approval of the thesis by the deans of the University. In the case of outside researchers who want to avail the IPSS, they may write a formal request to the Research and Planning Office (RPO) subject to the approval of the Research Director.

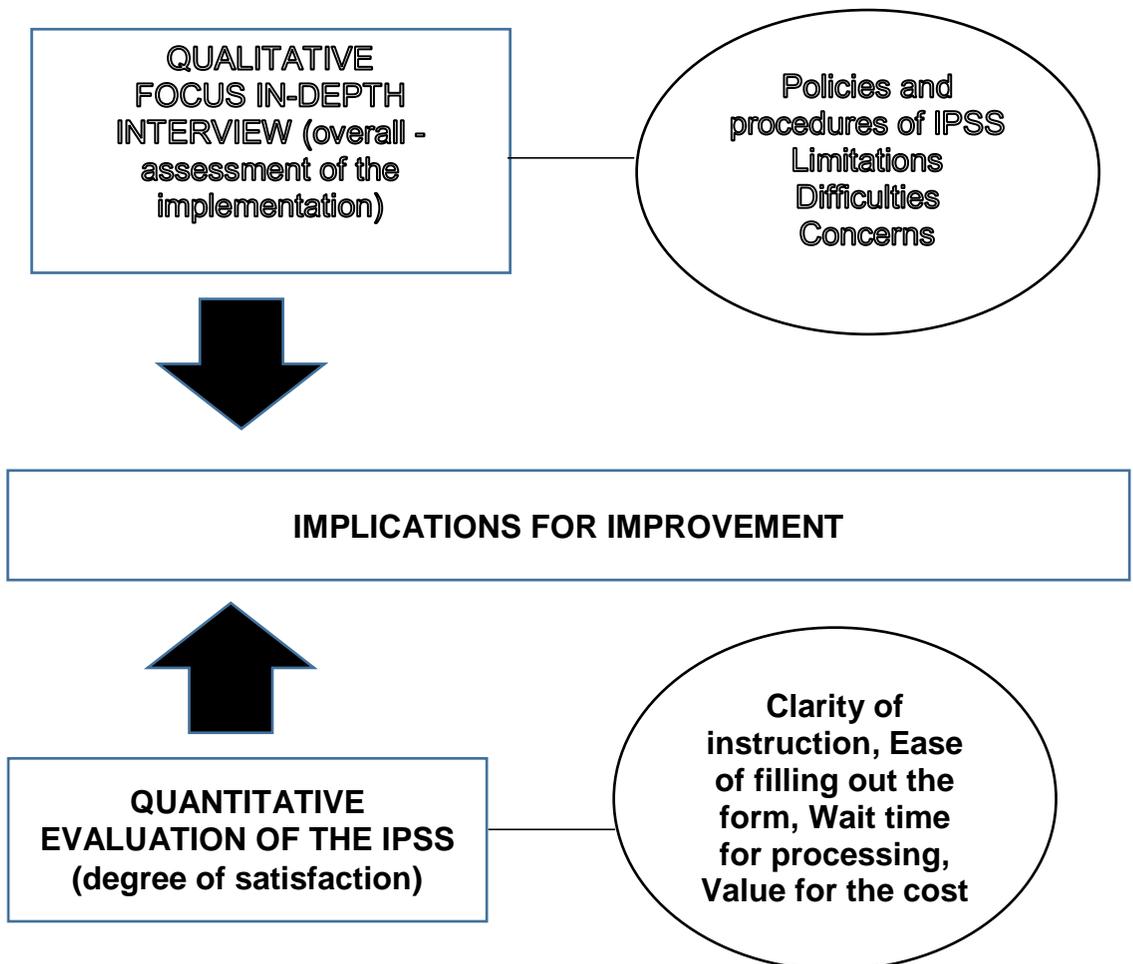
The IPSS policy and procedures are posted and available on the bulletin board of the RPO. Initially, the researcher secures and fills out the IPSS form and send the softcopy in the official UA PlagScan e-mail address. After which the RPO schedules the review within three days after the application. A preliminary scan and assessment of the number of words/ text indicate the amount paid. After that, the RPO issues a congratulatory letter and certificate if the paper satisfies the required net rate that is lower than ten percent net rate (<9.99%) for undergraduate and lower than five percent net rate (<4.99 %) for graduate and doctoral students. Revision of the manuscript through paraphrasing is necessary if the paper did not meet the standards. Paraphrasing of the identified plagiarized text must be performed until it satisfies the standards of plagiarism review of the University.

Meanwhile, one of the critical tools for the improvement of any program or service is its evaluation (Pinch, 2009). Evaluation is primarily an effective tool or mechanism in improving a program or service of an institution. It provides an audit for proper direction toward the

upgrading of existing curriculum, systems, and procedures in academic institutions (Morrison, 2003).

The convergent parallel design was adapted to derive separate views of the phenomenon (Cresswell, 2014). A summary of their descriptive insights of interviewees as well the degree of satisfaction of respondents. The researchers were guided accordingly based on the aforementioned conceptual framework.

Below is the conceptual chart of the process of evaluation. The process of assessment is explained in the method section.



**Figure 1. Conceptual flowchart of the study**

Numerous studies are dealing with plagiarism issues (Maina et al., 2014; Martin, 2005; Maurer et al., 2006; Sharma, 2010) and detection (Al-Khanjari, Faiidhi, Al-Hinai, & Kutti,

2010; Jankowitz, 1988; Maurer et al., 2006; Semerdzhiev & Trifonov, 2013), but there are limited studies that cover evaluation of the implementation of plagiarism scanning service in higher education institutions (HEIs) (Atkinson & Yeoh, 2008). Hence, the need to conduct a study on this matter became an interesting research endeavor.

The current study assessed the IPSS of the UA, AY 2016-2017 and 2017-2018, in terms of operational procedures and degree of satisfaction of the community of student researchers. Specifically, it sought to 1) describe the experiences of the plagiarism scan service manager and clerical assistant concerning the policies and procedures of IPS; 2) describe their extent of adherence to actual procedures, and the limitations and concerns in managing and operating plagiarism software; 3) measure the degree of satisfaction of student thesis/dissertation writers relative to the services provided in terms of 3.1) clarity of instruction, ease of filling out the form; 3.2) waiting time for the processing 3.3) value for the cost and completeness and; 3.3) correctness of the certificate.

The study did not directly cover the evaluation of the subscribed online software but the plagiarism scanning service provided at the University. The respondents were limited to the students of UA AY 2016-2017 and 2017-2018, who undertook thesis writing both at the undergraduate and graduate level, and the participants are those directly involved in managing the plagiarism detector platform. The study may provide vital information for the improvement of the implementation of the IPSS in the University. Moreover, the baseline information is necessary to recalibrate procedures in preparation for its third year of implementation.

## METHOD

The study used a mixed-method via convergent parallel design in evaluating the implementation of the online plagiarism detection service. It is a combination of descriptive qualitative and quantitative approaches (Johnson & Onwuegbuzie, 2004). "The purpose of a convergent (or parallel or concurrent) mixed methods design is to simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem" (Cresswell, 2014, p. 94). There are two phases of the study- the qualitative where implementers sought their views on the IPSS implementation and the quantitative phase where the users evaluated the programs based on pre-set criteria.

The participants in the first phase were the plagiarism scan service manager and clerical assistant who know the operational protocols and guidelines. A focus in-depth interview was conducted to elicit views on the practices and observations on the first and second year of implementation of the program. A researcher's critique of the procedures that uncovered the difficulties and challenges became the output.

The participants in the second phase were student thesis writers who have availed of the plagiarism scan service for AY 2016-2017 to 2017-2018. A total of 103 student-

respondents were selected randomly through snowball sampling, of which 93 students come from the undergraduate level and 10 from the graduate level. There were 43 males and 60 females who evaluated the plagiarism scan service after availing the IPSS.

The tool used in the qualitative phase is an interview guide that consists of five vital questions: *What are your observations on the IPSS policies and procedures?*; *What are the steps in operating the plagiarism scanning service?*; *What are its limitations?*; *What are the difficulties you have encountered in operating the system?*; *What are the positive outcomes?*; *How much is the cost of the subscription?*; and *Was there a return of investment?*

The second instrument in the quantitative phase is a simple self-administered questionnaire composed of five items, namely: clarity of instruction, ease of filling out the form, wait time for processing, value for the cost, and completeness of the certificate. A 4-point Likert scale was adopted to assess the degree of satisfaction, namely: 0-not observed, 1-highly dissatisfied, 2-moderately dissatisfied, 3-moderately satisfied, and 4-highly satisfied. Before data gathering, the questionnaire was content and face validated by experts. Respondents evaluated the implementation of plagiarism scanning software service by rating each item according to the degree of satisfaction or dissatisfaction. Below is the arbitrary scale where measurements have equal range.

Scale	Verbal Interpretation
0.00 - 0.79	Not Observed (NO)
0.80 -1.59	Highly Dissatisfied (SD)
1.60 - 2.39	Moderately Dissatisfied (MD)
2.40 - 3.19	Moderately Satisfied (MS)
3.20 - 4.00	Highly Satisfied (SS)

The participation of the plagiarism scanning service manager and the clerical assistant was fundamental since it is their duty as staff of the RPO. Evaluation of the program is crucial in ensuring system excellence. Since the benefits of the evaluation study outweigh the risks, only explicit consent was sought from the students. Consent to participate in the evaluation was voluntary for the selected respondents.

Data from the evaluation were summarized using frequency, mean, and standard deviation, while qualitative data were interpreted and described according to themes and categories.

## FINDINGS

### IPSS in the Lens of the Implementers

The plagiarism scanning service manager and clerical assistant noted the following observations:

1. There was additional issuance of “Congratulatory” and “Sorry” letters to students, which prolonged the process and consumed rims of paper. Notably, the IPSS Certification would be a sufficient issuance.
2. Although it can provide a complete picture of the plagiarism review. the issuance of gross rate is found unnecessary. Only the net rate must be issued to the researchers so that there would be no ambiguity in the interpretation of ratings. Upon request of the researcher, the gross rate may also be declared.

### Actual Steps in the Conduct of IPSS

According to the plagiarism scanning service manager, these are the four basic steps in the actual implementation of the IPSS:

1. Downloading of the soft copy of the manuscript sent through e-mail by the author
2. Manual uploading of the manuscript in the subscribed online plagiarism software and computing the gross rate (compute the total number of words excluding the reference and the table of contents)
3. Checking the manuscript using the platform
  - a. Scanning is done page by page
  - b. Color shading codes: green for quotations, black for safe and red for plagiarized
4. Computing the Net Rate
  - a. Done by copying and pasting the red shaded texts/paragraphs from the processed data in the plagiarism scanning service to Microsoft Word and computed the percentage rate manually.
  - b. 
$$\text{Net Rate} = \frac{\text{Total number of plagiarized text}}{\text{Total number of words}} \times 100$$
  - c. Issuance of the Plagiarism Scan Certificate

Based on the time study conducted by the plagiarism scan manager, the whole scanning process ranges from a minimum of 15 minutes to a maximum of 30 minutes, depending upon the length of the manuscript. There are 16 to 32 manuscripts that can be screened in a day for an 8-hour working period.

They observed that sentences or groups of words are difficult to rule out, while paragraphs are the easiest to identify as plagiarized. The human scrutiny skill is crucial in determining plagiarized work since the plagiarism scan manager must be able to identify directly lifted paragraphs from sources.

Based on the assessment, the number of words ranged from a minimum of 1,106 to 16,154 in the college. The graduate school meanwhile incurred a range of 7,984 to 46,574. A total of 237 manuscripts were scanned for AY 2015-2016 and 321 for AY 2016-2017 based on the PlagScan Report submitted.

### **Limitations of the IPSS**

1. Grammar checking is not included. Errors in grammar are not recognized.
2. There is inconsistency in the type of color in highlighting quoted sentences and paragraphs (e.g., provisions, decrees, laws, Bible passages, etc.).
3. If there is gross detection of plagiarized work, the authors are asked to revise. The second review of the manuscript and the computation of the net rate is calculated through a manual process, which is very sensitive and tedious.

### **Cost of the Subscription and Return of Investment**

For the first year of implementation, the gross income from customers was not able to offset all the total cost of subscription of the institution. Ninety-three percent of the cost was returned. Notably, there was a return of investment in the second year of operation where all the students writing theses and research have availed the plagiarism scanning service with at least eighteen percent net income. Therefore, the IPSS is a sustainable and viable enterprise with the assurance of research ethics.

### **Limitations of the plagiarism scanning service manager**

1. There is difficulty on the part of the manager to identify plagiarized texts of the manuscript when texts are written in foreign languages.

2. There is difficulty on the part of the manager to distinguish the insertion and inclusion of new paragraphs and new texts, particularly on the second review/scanning of the manuscripts.

3.

**Other Concerns:**

1. Plagiarism scanning service is affected by a slow internet connection. Experience of long queues was observed during peak months, where many students availed of the service.
2. Due to internet failure, there was an aborted scanned manuscript, which was very difficult to re-scan.
3. When one scans a manuscript, the content is fed to the databank of the system. The scanned data in the first review of the manuscripts appeared to be plagiarized in the second review. The scan manager manually scrutinizes the texts that entail and consumes time and energy.

**Table 1**

***Level of satisfaction of thesis/dissertation writers with IPSS***

Indicators	Not Observed	Highly Dissatisfied	Moderately Dissatisfied	Moderately Satisfied	Highly Satisfied	Mean	Std. Deviation	Verbal Interpretation
			1	15	87	3.83	0.398	Highly satisfied
Ease of filling out the form				12	91	3.88	0.322	Highly satisfied
Wait time for Processing				26	77	3.75	0.437	Highly satisfied
Value for the Cost			2	28	73	3.69	0.505	Highly satisfied
Completeness and Correctness of Certificate				6	97	3.94	0.235	Highly satisfied
General Mean						3.82		Highly satisfied

N=103

Table 1 shows that the mean scores of the five indicators are higher than 3.20 (minimum SD=.322 & maximum SD=.505), which indicates students' strong level of satisfaction. Ease of filling out the form was identified to be students' highest level of satisfaction (M=3.88, SD=0.322), followed by the clarity of instruction (M=3.83, SD=.398). The value for the cost, though still high, incurred the lowest mean. The overall mean is 3.82, indicating community acceptance of SPSS based on the satisfaction level.

Moreover, it shows the frequency where only three respondents are moderately dissatisfied with indicators, specifically on the clarity of instruction and value for the cost. Overall, the majority of respondents are strongly satisfied with IPSS of the institution. The more significant majority are highly satisfied with the five given indicators: completeness and correction of the certificate (n=97), ease of filling out the forms (n=91), clarity of instruction (n=87), wait time for processing (n=77) and value for the cost (n=73).

## DISCUSSION

Reviewing the written policies and procedures of IPSS was a very productive endeavor since its offshoot would automatically provide recommendations for improvement. Unnecessary issuances and streamlining of procedures may be discarded to provide seamless and efficiency in the delivery of service. It is one of the very salient points of sound management and ISO standards (International Standards Organisation, 2009).

Based on the findings, the staff's mastery in the use of plagiarism software is a primary thrust and challenge in ensuring speedy processing of manuscripts. Prolong utilization of the technology would be very advantageous and beneficial to both the implementer and the clientele since it would naturally be developed into a skill or habit. Electronic detection with skillful manual analysis combined with the right procedures would provide a good model for detecting plagiarism (Bretag & Mahmud, 2009). On a low note, it was also observed that there was only one member of the staff who knows how to use the technology. In case of unavailability of the operator, there will be delays if not long queues upon his/her resumption. The need to involve other members of the research staff in knowledge and skills training on the use of the software is necessary.

Information dissemination is vital for effective implementation of plagiarism detection (Batane, 2010; Born, 2003). Notably, the entire research community must be well-informed about the IPSS policies and procedures. Through proper dissemination of policies and procedures in research courses, students should submit their completed manuscript for plagiarism review on time and without unnecessary delays. Plagiarism prevention must be disseminated in research courses and emphasize the value of good research design (Risquez, O'Dwyer, & Ledwith, 2011)

The subscribed plagiarism platform was identified to be effective in the determination of plagiarized work. Its search engine is functioning at its best form, for there are a plethora of

studies and a gamut of literature appearing in every scanned manuscript. However, the software has a limitation in terms of spot-checking errors in grammar. Moreover, manuscripts having non-English words are not covered in the review since no review settings for foreign language texts are available. Unfortunately, research manuscripts written in Filipino are automatically exempted from plagiarism detection.

The functionality of every programmed software always stems from its being user-friendly. Concomitantly, user perception influences software utility (Morris & Dillon, 1997). When technology is found to be complicated and complex in terms of its use, there is a need to adjust and re-engineer the system so that customers and users may appreciate its new refinement and advancement (Thayer, 2002). Notably, the subscribed plagiarism platform did not have the internal mechanism of identifying the manuscript's text continuum. The second plagiarism review would not immediately identify the manuscript's net rate without manually discarding previous components of scanned paragraphs. It is one of the gaps that need to be addressed by the provider.

Overall, the results of the evaluation of the IPSS seemed to imply a "very high" satisfaction rating. Satisfaction and acceptance are integral in software application and utilization (Wixom & Todd, 2005). There is community acceptance of the subscribed online detection software and its processes and procedures. Notably, the clientele favored the implementation of the IPSS at the university. They attested the credence of their research manuscripts; that is, there is the assurance of being clear of plagiarism. With the five indicators for evaluation, respondents are happy with the service provided, giving an impression of "highly satisfied" customers.

The clarity of instruction is essential in submitting the manuscript for scanning. If customers cannot understand what and how the system works, then this may lead to confusion and dissatisfaction. Clarity of instruction is vital in any operation, and particularly it has a strong bearing in rating the services rendered (Redish & Laskowski, 2009).

Ease of filling out a form while submitting the manuscript makes the response faster and not a burden for the respondents. With 91 respondents strongly satisfied with this indicator, means the form is easy and not complicated to fill out. The design of a suitable evaluation template has a psychological effect on respondents, making them more responsive and eager to answer (Wright & Wilcox, 1979).

Quality may be inferred from the wait time (Kremer & Debo, 2016) with a mean score of 3.77 and a frequency count of 77 under "highly satisfied," respondents revealed that wait time for processing has meted out the expectations of a researcher. Though, there are still ways of improving the wait time in reviewing the manuscripts like hiring additional staff when processing volumes of papers during peak seasons of submission. It may give ample time for the researcher in case his/her manuscript needs revisions.

The value-for-money revolution is a new model in the contemporary global business landscape (Williamson, 2010). It is one of the criteria which was evaluated. Value for the cost seemed to be the lowest indicator though still rated as “highly satisfied” with 73 respondents. The IPSS of the University is relatively affordable as compared to nearby universities in Pampanga. Two outsiders who availed the IPSS of the institution attested to this, according to the plagiarism scan manager.

In some universities, plagiarism review is costly, ranging from 80 to 100 per page. For this, the University is open and accepting manuscripts for plagiarism review even though they are not bonafide students of the UA. There was indeed customer satisfaction as a result of a positive perception of the value for the cost received in the transaction (Shankar, Erramilli & Murthy, 2004).

Completeness and correctness of certificates are some of the indicators that add value to a service rendered. The set of criteria and indicators served as a parameter for evaluation (Chichaibelu, Stellmacher & Grote, 2012). The release of complete and correct certificates generally arouses satisfaction on the part of the clientele, rendering positive feedbacks regarding IPSS. With the highest mean rate of 3.95 for this indicator implies that respondents are indeed highly satisfied in subjecting their manuscript to the plagiarism certificate they obtained after passing plagiarism scanning software service for their manuscripts.

The IPSS implementation for the first pilot years got a “thumbs up” in the overall implementation. Nevertheless, data from assessment revealed implications for improvement that need to be addressed. The following recommendations surfaced:

1. The need to be practical and seamless in the issuance of an IPSS certificate is necessary to streamline processes and procedures efficiently.
2. The mastery in the use of IPSS is crucial to be more efficient and seamless in processing papers, thus lessening the length of the review process.
3. In-house capability training on the use of the plagiarism detection software for other research staff may be conducted.
4. Students must be informed in their research courses about the IPSS procedures so that there will be efficiency in uploading their papers.
5. A software that can check the grammatical errors in the manuscript may be considered and subscribed. Training of IPSS operators on the rudiments of the plagiarism device is crucial in efficiently sustaining its operation.

6. The individual subscription of the institution is found to be a good investment considering that the scanning of faculty manuscripts is free.
7. A feature for scanning foreign languages may be suggested to the provider. Language experts may assist in scanning manuscripts. Subscription to an online grammar check may also be recommended.
8. The provider may consider having a specific feature for the second review, which would automatically and efficiently compute the plagiarism net rate regarding the first review.
9. An efficient service provider that provides a better internet connection may be considered. A seamless check and balance tool for the first review and the second review may be installed and developed by the technology provider.

Since plagiarism is a complex phenomenon, there is a need for a holistic institutional approach (Macdonalda & Carrollb, 2006). All universities and academic institutions need to subscribe to electronic plagiarism online scanner that would cater to the research needs of students and faculty. The rationale is to promote academic and moral integrity among thesis writers and researchers in the academic institution.

Lastly, the University of the Assumption (UA) may consider not only the periodic evaluation of its online plagiarism but also consider subscribing with the latest and most advanced technology for online plagiarism detection. With the undeniable success of the IPSS of the University of the Assumption, it is recommended that such plagiarism detection service must be sustained toward achieving its thrust of becoming a **cheat-free** academic institution.

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