



INFORMATION DISSEMINATION STRATEGIES TO FACILITATE THE EXAMINATION PROCESS: A CASE STUDY OF FSPPP EXAM KIT

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Abstract:

The development of the Internet led to the development of various communication mediums such as websites, mobile phones, and social networking systems. The physical limitations and constraints of conventional media in conveying information can be overcome with the emergence of digital media technology. Thus, the research has been carried out to examine the effectiveness of a new examination information dissemination approach, which is also known as the FSPPP Exam Kit. The study examines the student perception of the kit and assesses the outcome of the kit implementation. This includes disciplinary issues such as cheating, improper dress code, missing examination slips, and late/absenteeism for examination. This study uses a quantitative approach and a questionnaire to collect information. The study population includes students from the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), Seremban, as many as 2000 students. The sample size involved 322 systematic randomly selected respondents. The data was analyzed using descriptive and inferential analysis. The study results found that most students have widely accepted this kit, and it helps reduce examination disciplinary issues. Moreover, a significant negative

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relationship exists between kit effectiveness and disciplinary cases. The kit can be an alternative to the faculty's formal communication tool with appropriate improvements. The kit helps them get information, interact with each other, and improve their knowledge about the examination procedures. This study reveals the importance of websites and new media in delivering information to university stakeholders.

Keywords:

Information Dissemination, Examination, Technology, Evaluation

Introduction

Students are often considered potential leaders and successors to the next generation. Students are an essential asset in building a developed and competitive country. Therefore, students should have both academic and high integrity values before moving to the next level, which is employment (MacLeod & Eaton, 2020). If students' integrity and moral systems are not well maintained, it can negatively impact students and the system in a country (Stone, 2023). Most people fail to see the impact and importance of a person's moral values and integrity in forming a transparent society. Universities and faculties should emphasize the production of students with noble character and a clear understanding of ethical and moral values (Amzalag et al., 2021). Comas-Forgas et al. (2021) explain that ethics in the exam is to answer the exam questions clearly and not copying or cheating. Related knowledge on exam ethics must also be emphasized during the learning session. Unethical behavior seems to be more widespread in every aspect and anywhere, whether in business, education, investment, services, or others. If seen in the field of education, the increasingly intense competition is one of the reasons why students tend to do unethical acts (Amzalag et al., 2021). Few students are willing to do anything to excel in exams, including imitating. The desire to get high results and too much fear and stress cause exam misconduct. This can contribute to various problems, including students' ability not being assessed accurately and the excellence of the student's knowledge not going hand in hand with his/her excellence and encouraging fraudulent practices (Sotiriadou et al., 2020). If this problem is not addressed immediately, it will negatively impact the students' ethics and performance (Guerrero-Dib et al., 2020). If not controlled, ethical misconduct in exams will become more prevalent. Early warning and awareness allow them to be regulated. Every educational institution must explain the ethics that must be followed before, during, and after the exam.

Therefore, to overcome these problems, a group of researchers from the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), has come out with strategies to disseminate important information on examination by creating an FSPPP Exam Kit that encompassed QR code and websites as one-stop center information. The emergence of the Internet as the latest communication tool makes it a medium for disseminating information, consolidating knowledge, and increasing knowledge in the community (Akhmedov, 2022; Gao & Huang, 2020). The Internet has facilitated the communication process, the process of information delivery, and the process of interaction between communities (Dimpleby & Burton, 2020; Zerfass et al., 2020).

Effective communication has four characteristics: understanding, fun, keeping the trust, and follow-up action (Heide et al., 2020). A person communicates when someone who hears understands the words as intended (Van Ruler, 2020). Some speeches in public are intended to

create a sense of fun, such as a speech after a meal or a speech of appreciation. Effective communication is quality communication, which focuses on trust (Hallahan et al., 2007). To keep trust is to speak what is true. In this context, every conversation that is spoken can attract the trust of others (Yang et al., 2023). With communication media, the recipient of the message can repeat to read, listen, and see the contents of the message (Zerfass et al., 2020). One modern communication media currently used is the cell phone or mobile phone. In the past, this communication style was limited to only being used by people in high economic positions, such as businessmen. However, with the advancement of time and technology, mobile phones are now used by everyone, including children and the younger generation (Alshikhi & Abdullah, 2018). This study aims to help lecturers and students understand the examination procedures, rules, and regulations via the communication media. Nowadays, Disciplinary problems can be categorized into four types: crime, negative behavior, absence, and cheating. Providing appropriate guidelines and information could help shape the students' physical, spiritual, intellectual, moral, or social values. This kit can cater to the needs of the young generation or Generation Z. Gen Z can operate various digital devices easily and quickly and utilize them for various needs, such as studying, working, creating, and socializing. They are also globally connected and networked in the virtual world. Thus, generation Z is a generation that is very familiar with technology and uses it for various purposes. This makes them have extensive knowledge, which is another characteristic that distinguishes them from other generations (Katz et al., 2021).

Literature Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is one of the models that can be used to analyze the factors that influence the acceptance of a system or information system. This model was first introduced by Fred Davis in 1986. TAM is an application and development of the Theory of Reasoned Action (TRA) that specializes in modeling user acceptance of information systems. Among the purposes of TAM is to explain the determining factors of acceptance of information-based technology in general and to explain the behavior of end-users of information technology with a wide variation and the user population. The original construct of TAM formulated by Davis (1989) are perceived usefulness, perceived ease of use, attitude, behavioral intention, actual use, and several external perspectives, namely, experience and complexity. The usage perspective (perceived usefulness) is a phase where a person believes that the user of a particular system will be able to increase the person's work performance. Ease of use is also one of the points in the TAM model, which has been tested in the research of Davis et al. (1989). The results of the research show that this factor is empirically proven to be able to explain the end user's reasons for using the information system as well as explaining that the new system that was being developed at the time was accepted by the end users. Next, attitude towards the application is interpreted as the user's evaluation of his or her curiosity in using technology. Behavioral intention to use is the tendency to keep applying a technology (Davis, 1989). At the same time, actual use is the real application (Davis, 1989). People will feel comfortable using the system if they are convinced that it is not difficult to use and is proven to increase their productivity, as reflected in the actual use.

Digital Technologies in Education

Technology has revolutionized every aspect of our lives, from how we live to the education system. With the advent of technology, education has become more accessible, engaging,

adaptable, collaborative, and effective. Technology has undoubtedly brought a paradigm shift in the traditional education system, and it has changed the way students learn, and educators teach (Barakina et al., 2021). One of the most significant effects of technology on education is increased access to education. Technology allows students to learn from anywhere and provides alternative ways for students who may not have access to it (Qureshi et al., 2021). For example, online learning, digital textbooks, and educational videos have enabled students to access educational materials anywhere. This is especially useful in remote or underserved areas where traditional educational opportunities are unavailable. Technology in education has also enabled students with disabilities to access educational materials that were previously inaccessible to them (Timotheou et al., 2023). With technology in the learning system, education has become more inclusive and accessible.

Technology has increased student engagement in the classroom (Haleem et al., 2022). With the use of interactive materials such as digital textbooks, other digital-based educational tools, or electronic gadgets, students are more motivated to involve themselves in the learning process (Timotheou et al., 2023). Technology has made learning more interactive and fun, and it has helped keep students motivated and interested in their studies. For example, educational games and simulations make learning more fun and interactive, and they help students retain information better. Technology enabled educators to modify learning according to the suitability of each student (Howard & Mozejko, 2015). With the use of technology in education, educators can assess each student's strengths and weaknesses and tailor learning plans according to each student's level of adaptation (Pinto & Leite, 2020). This ensures that students learn at their own pace and get the support they need to succeed. Personalized learning has been shown to improve academic performance and increase student motivation (Haleem et al., 2022).

Technology increased collaboration among students and educators (Barakina et al., 2021). With technology in learning, especially online learning, students can collaborate on group projects, share ideas, and learn from each other. This can make learning more social and help build a spirit of helping each other in the classroom (Pinto & Leite, 2020). For example, online discussion forums, video conferencing, and shared documents make it easy for students to collaborate on projects and assignments. The collaborative nature is demonstrated in improving students' critical thinking, problem-solving, and communication skills. Next, technology in education can also produce effective learning results (Singh, 2021). Educators can monitor each student's progress and identify areas needing additional support. This can help improve academic performance and prepare students for the future. For example, learning analytics can provide information about student behavior and performance, which can help educators make data-based decisions about their teaching methods (Haleem et al., 2022). Technology can also help students learn in a way that is more aligned with the skills they will need in the future. For example, technology has enabled students to learn coding, digital literacy, and other valuable skills in today's era. Overall, technology significantly impacts education and can change how students learn and how educators teach for the better (Pinto & Leite, 2020). From increased access to education to personalized learning and better collaboration, technology has brought many benefits to education.

Information Dissemination Using Technology

Communication is a fundamental human activity that takes an important part and cannot be separated from human life as a social being (Dimbleby & Burton, 2020). By communicating,

humans can relate to each other. Etymologically, communication comes from the Latin "communicare" which means to convey (Sharma, 2017). When interpreted etymologically, communication conveys meaning from one entity or group to another using signs, symbols, and semiotic rules that can be understood together. Communication is a way for a message to reach the receiver delivered by the sender or messenger. When communicating, one needs to use suitable communication media so that the message to be conveyed can reach the receiver of the message (Anrieta, 2020).

In this digital age, technology has dramatically changed how humans interact and communicate (Van Ruler, 2020). From social media to instant messaging applications, technology simplifies communication and significantly changes the pattern and dynamics of our social interactions (Anrieta, 2020). In the past, interpersonal communication was more often done directly, through face-to-face or verbal communication. Physical and face-to-face meetings are essential for building trust and understanding body language, which is integral to communication. Now, with platforms like WhatsApp, Zoom, and social media, many people prefer to communicate through screens (Yang et al., 2023). People no longer must meet in person to communicate. Technologies allow people to stay connected with family and friends, even from a distance. Platforms like Facebook, Instagram, and Twitter allow us to easily share important moments, thoughts, and opinions (Molinillo et al., 2021).

In today's digital era, the Internet is one of the most widely used tools to facilitate various activities. Anyone can access the latest information from anywhere through the website using various devices ranging from smartphones, tablets, and laptops to PCs, just by using an Internet connection (Pinto & Leite, 2020). Websites are one of the most popular platforms for finding information and various means of communication. Moreover, there are many applications and tutorials on how to create a website from scratch without writing code, which makes creating a website more accessible. The rapid and effective dissemination of information is why the website will always be an essential means of gathering and managing information (Barakina et al., 2021). The main benefit of a website is that it sends information. In this modern era, websites can be used as a marketing platform to reach a broader audience on the Internet. For individuals, websites are often used as a means of communication. Communication can be done quickly through social media platforms and through websites. For example, Facebook, WhatsApp, Twitter, Instagram, and others.

Examination Information Dissemination

The primary step to ensure zero student discipline problems in higher learning institutions is to establish clear rules and strict procedures if they break them. The faculty should have a clear and comprehensive examination discipline handbook to remind students. This handbook should list all the rules, procedures, and disciplinary actions to be taken in case of student violations. It should also include student rights and responsibilities. The lecturers and academic staff can play a role in ensuring that all students understand the rules and discipline procedures. This action can be done through effective information dissemination. Students need to be exposed to the consequences that will be faced if they break the rules. Thus, ensuring all students know their responsibilities to maintain good communication practices, provide easy access to essential and valuable information, and provide effective communication methods is essential. Formal communication channels should characterize the formal communication of rules, laws, and procedures. Communication also facilitates the flow of information, data,

opinions, ideas, and views (Hyland-Wood et al., 2021). We often rely on formal communication tools like email to connect with colleagues and students.

However, there is now a new social media communication pattern that has changed the way we communicate (Anrieta, 2020). The advantages of social media as a communication tool using technological assistance have increased the ability to interact and perform essential management functions, contributing to the effectiveness of internal communication. FSPPP Exam Kit utilizes QR codes and app applications to link students to the examination website. QR Code has several advantages compared to traditional methods: 1) it can store more information in one code, 2) it can be read more quickly and easily using a smartphone, and 3) it can be integrated with other applications and systems. Generation Z lives in a digital era that triggers high expectations for technological advancement. Generation Z's interest in the latest technology is based on its features, ease of use, and social, economic, and environmental impact (Katz et al., 2021). Generation Z shows great interest in sustainable technology. Thus, the kit is regarded as the most appropriate information strategy that needs to be employed by the faculty. Figure 1 shows the interface of the FSPPP Exam Kit.

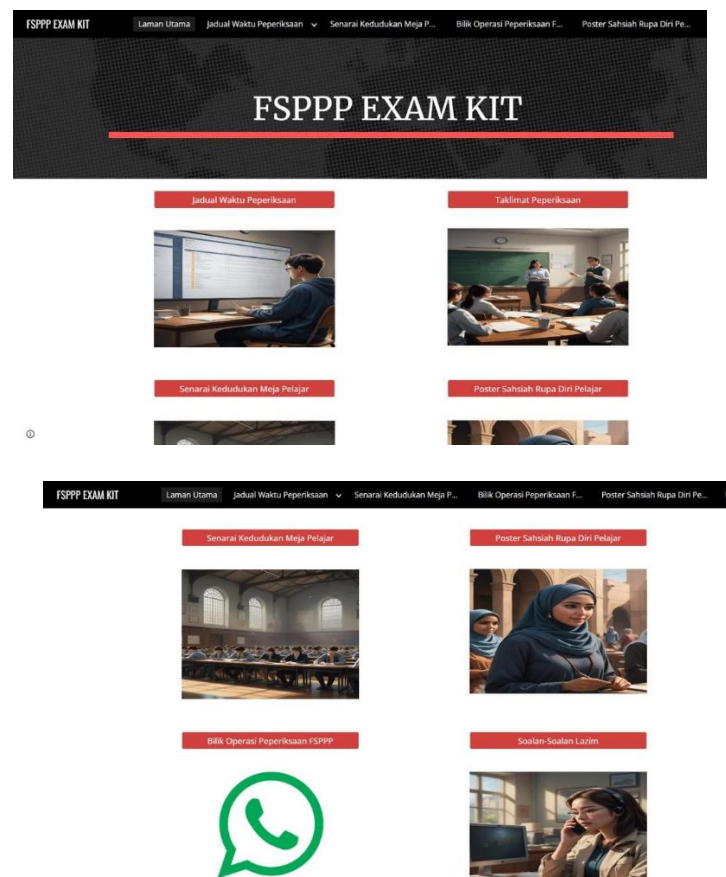


Figure 1: FSPPP Examination Kit

Methodology

In this study, the researchers chose a survey of students. Survey research is very suitable for large samples because it can provide information directly from the sample and provide accurate and effective results (Mellinger & Hanson, 2020). The construction of this research

questionnaire is based on the discussion from the researchers' informal interview with two experts. The study population includes students from the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), Seremban, as many as 2000 students. The sample size involved 322 randomly selected respondents based on Krejcie and Morgan's Sample Size Table (1970). Systematic sampling is a probability method used to select elements that will be part of the sample for a statistical study. In systematic sampling, one element is randomly selected first, and other elements in the sample are selected at specific intervals. Three hundred twenty-two questionnaires were distributed, and only 187 completed questionnaires were filled out and returned to the researchers. The questions use a 5-point Likert scale from Score 1 to Strongly Disagree, Score 2 as Disagree, Score 3 as Neutral, Score 4 as Agree, and Score 5 as Strongly Agree. Likert scales are easy to understand and use because they consist of a series of statements that participants can rate on a scale of 1 to 5. Likert scales usually have high test-retest reliability, which means they provide reliable results when used at different points in time (South et al., 2022).

The data was analyzed using the Statistical for Social Science (SPSS) software version 26. Descriptive and inferential analyses were employed to describe and summarize the collected data. To determine the suitability and usability of an instrument, it is necessary to implement the validity process. Validity is used to measure the accuracy of a measure used in a study (Elangovan & Sundaravel, 2021). In this study, the instrument was validated by getting feedback from two expert assessors in information management. At the same time, the instrument's reliability is measured through testing coefficient alpha. The reliability of an instrument is observed based on Cronbach's Alpha value, which must be more than 0.60 (Hair et al., 2010). The reliability value for the study has fulfilled the assumption as Cronbach's Alpha value exceeds 0.60 ($\alpha = 0.789$). Pearson's correlation measures the strength and direction of the linear relationship between two variables. Two variables are said to be correlated when a change in one variable is accompanied by a change in the other, either in the same or opposite direction.

Findings

Based on Table 1, most students are aware of the establishment of the FSPPP Exam Kit ($n=157$, 83.4%). Moreover, most agreed that the kit provided sufficient information ($n=123$, 65.8%). In examining whether the kit is easy to use and access, 115 respondents (61.5%) agreed, and 115 respondents also agreed that the kit is to understand and has stability ($n=115$, 61.5%). Moreover, 120 respondents (64.2%) agreed that the kit provided comprehensive information. Thus, most respondents have seen the kit as a positive platform for examination information dissemination.

Table 1: Student Perception of the Kit Effectiveness

		Frequency (n)	Percent (%)
Awareness of the kit	Yes	157	83.4
	No	30	16.0
The kit can provide sufficient information	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	19	10.2
	Agree	123	65.8
	Strongly Agree	45	24.1

The kit is easy to access	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	19	10.2
	Agree	115	61.5
	Strongly Agree	53	28.3
The kit is to understand and has stability	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	23	12.3
	Agree	115	61.5
	Strongly Agree	49	26.2
The kit provides comprehensive information	Strongly Disagree	0	0
	Disagree	0	0
	Neutral	20	10.7
	Agree	120	64.2
	Strongly Agree	47	25.1

Table 2 shows the number of comparisons between Examination Disciplinary Cases before and after the implementation of the kit. A significant reduction of cases can be observed for cheating, improper dress code, missing examination slips, and late/absenteeism for examinations where the number is declining. For example, the cheating cases have been reduced from 11 to 8. Next, improper dress code cases have been reduced from 75 to 12 cases. Then, the number of missing examination slips cases was reduced from 58 to 26 cases. Finally, late/absenteeism for examination cases has been reduced from 1 case to zero case.

Table 2: Examination Disciplinary Cases

	Before the Kit Implementation (July 2023)	After the Kit Implementation (February 2024)
Cheating	11	8
Improper Dress Code	75	12
Missing of Examination Slip	58	26
Late/Absenteeism for Examination	1	0

Table 3: Pearson Correlation Result

		Disciplinary Cases
Kit Effectiveness	Pearson Correlation	-0.608**
	Sig. (1-tailed)	0.000
	N	187

Using the Pearson correlation formula, this study calculates the correlation coefficient between two variables. The Pearson correlation coefficient ranges from -1 to 1, with positive values indicating a positive relationship, negative values indicating a negative relationship, and values close to 0 indicating no linear relationship between the two variables. Table 3 shows a significant negative relationship between attitude ($r = -0.608$; $p < 0.05$) and disciplinary cases. A negative correlation means that if kit effectiveness increases in value, then disciplinary cases decrease.

Discussion

The study results found that most students have widely accepted this kit, and it helps reduce examination disciplinary issues. Technology acts as an intermediary to distribute various types of information for different purposes (Haleem et al., 2022). Information and communication technology (ICT) can help education managers make decisions, adapt to changes, and improve organizational communication. Technology helps faculty management make sound decisions involving information, processes, and work such as student registration, various records, inventory control, timetables, exam-related matters, and others (Timotheou et al., 2023). Howard and Mozejko (2015) state that information and communication systems are integrated components that collect and store information to help organizations make decisions, plan, control, and analyze. Technological progress has provided resources, information, and communication that are very wide compared to humans (Barakina et al., 2021). The world has moved from the era of industrialization to the era of information, giving birth to an information society. With the combination of high technology capabilities and global networks, then the production of information can increase very quickly (Qureshi et al., 2021). The website has a function as a communication medium. Several social media platforms provide applications that can be accessed via websites such as Facebook, WhatsApp, Twitter, and Instagram. The website can be a vehicle for communicating and socializing online. The website serves as the most up-to-date information source for online readers.

This study is significant because it assesses student perception of the information platform. With the exam kit, the students do not need to wait long to receive and retrieve documents; now, everything can be done in real-time. Through online information dissemination, documents and feedback can be sent instantly. This ensures that work runs smoothly without any delays. This effectiveness allows tasks to be completed more quickly and improves workflow smoothness. The kit ensures that everyone is always on the same track and has access to the latest information on examination. The user's evaluation of the characteristics of the information content is likely to determine user satisfaction with the quality of information. Through communication, humans can know the opportunities available to be utilized, preserved, and avoided (Dimpleby & Burton, 2020). Communication is essential for improving the knowledge of individuals and groups in their surrounding communities. Through communication, people can learn about an event or procedures to follow (Zerfass et al., 2020).

Communication is the primary key to achieving the university and faculty's objectives. It is an important medium to ensure the entire university community understands, appreciates, supports, and gets involved in implementing goals and strategic plans. Speaking of the message, two essential things should be given attention. The first is to understand the meaning and purpose of the message (Rezvani et al., 2022). From the feedback, we can assess the extent to which feedback can impact messages and resources (Hyland-Wood et al., 2021). Since the students have various levels, not all can access information quickly. Therefore, the faculty needs to use methods other than face-to-face briefings, notice boards, and printed materials to channel the information to the students. The faculty needs to take advantage of communication technology facilities to improve service. The explosion of communication technology can trigger significant changes in organizational management styles, thus changing the way of thinking and acting and building a strategic communication environment.

Therefore, selecting the proper strategic communication can form effective communication patterns in the organization while reducing complaints against service. This study suggests that the faculty ensure the kit and website have user-friendly features, provide the desired information, and are exciting and different from other websites (Szombathelyi et al., 2015). Website features that meet users' needs and wants can attract interest, influence them to continue surfing, and then accept it as a platform to get the desired information (Molinillo et al., 2021). A website must provide sufficient and up-to-date information content and attractive and entertaining visuals to satisfy its visitors (Rezvani et al., 2022). The study's results have proved that strategic communication influences the effectiveness of message delivery. This study is expected to help the faculty in improving communication practices. Educational institutions need to be aware of the importance and role of websites that are more user-friendly, easy to navigate and have up-to-date content that can help disseminate information. This study also has implications for the FSPPP, especially the management responsible for constantly maintaining, channeling, and monitoring information on the website to emphasize user-friendliness, ease of use, access, and accurate and up-to-date information content for users.

Conclusion

ICT technology in education benefits and produces more effective teaching, learning, and management. Learning through websites facilitates transmitting information regardless of time and place. Using ICT in a thoughtful, planned, and appropriate manner increases the efficiency and effectiveness of teaching and learning. This study showed that a robust information and ICT system can collect and store information to help faculty make decisions, plan, control, and analyze information related to the examination. In addition, using websites allows educators to deliver and publish materials online. The website developed will be a source of information without boundaries that can be reached through search engines quickly. The websites connect the faculty and stakeholders to deliver the latest information accurately and quickly. Simple and accurate information delivery is essential to attract the students' interest and attention so they can focus on their studies. Therefore, the website is an essential platform for building a positive image of the faculty, reflecting its condition, abilities, and reputation to the target group, especially students. The study has delivered new insights into the current literature of information management studies. However, several limitations have been identified. First, the study is a cross-sectional survey. Thus, the relationship pattern examined is a portrait or static of a moment. Future research must use a longitudinal approach to view behavioral changes over time. The research sample was also limited to students from one faculty only; thus, the research results cannot be widely generalized. Further research is expected to focus on the sample from other contexts. Future research is also expected to adopt the interview method because the questionnaire might lead to bias.

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