

Original scientific paper

ACADEMIC INTEGRITY ON M-READER: THE CASE OF FOUNDATION PROGRAM STUDENTS AT SULTAN QABOOS UNIVERSITY

Tariq Al Damen, Karleen Cambridge

Sultan Qaboos University, Sultanate of Oman

Abstract. *M-reader is an online extensive reading tool that motivates learners to read extensively and autonomously. Through its online quizzes, M-reader tests students' comprehension of graded readers and provides evidence that they have read and understood their reading. Today, M-reader is used by several academic institutions around the world to facilitate their extensive reading programs. However, concerns have been raised about academic integrity in connection with M-reader. For instance, one of the foremost challenges of administering M-reader is students taking quizzes on behalf of others. 229 first-year university students enrolled in Sultan Qaboos University's Foundation Program (FP) in Oman participated in the current study. The purpose of this paper was to investigate the effectiveness of the measures implemented to reduce cheating on M-reader, as well as to discover what students perceive as academic integrity on M-reader. To gauge the efficacy of M-reader in maintaining academic integrity, participants completed an online questionnaire and samples of the various measures were collected and analyzed. The findings of the study revealed that the measures taken to mitigate academic integrity on M-reader were ineffective. The findings also indicated that M-reader appeared ineffective in maintaining academic integrity among students. Additionally, the study identified how students perceive the measures taken to mitigate cheating. Moreover, the study suggests ways to improve the effectiveness of M-reader in terms of academic integrity.*

Key words: *extensive reading (ER), M-reader, Foundation Program (FP), academic integrity, learner autonomy*

1. INTRODUCTION

Extensive reading (ER) is one of the most common approaches to improving reading comprehension among EFL learners worldwide (Meniado, 2021). Day and Bamford (2004) define ER as “an approach to language learning in which learners read a lot of easy material in the new language” (p.1). Moreover, some scholars consider 'reading for pleasure' as one of the most important characteristics of ER. Nation and Waring (2013) point out that ER's primary objective is to encourage readers "to do large quantities of enjoyable reading outside of class time" (p.6). In ER programs, EFL learners read a lot of texts to develop good reading habits

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Corresponding author: Tariq Al Damen, Sultan Qaboos University, Sultanate of Oman

E-mail: t.aldamen@squ.edu.om

and a passion for reading (Day & Bamford, 2004). ER programs can also improve language learners' general language proficiency, vocabulary skills, and macro-linguistic skills (Chang & Renandya, 2017). Bamford and Day (2002) identify ten successful principles of ER: 1) The reading material is easy; 2) A variety of reading material on a wide range of topics is available; 3) Learners choose what they want to read; 4) Learners read as much as possible; 5) The purpose of reading is usually related to pleasure, information, and general understanding; 6) Reading is its own reward; 7) Reading speed is usually faster rather than slower; 8) Reading is individual and silent; 9) Teachers orient and guide their students, and 10) The teacher is the role model of the reader (p.136-141). ER also helps students expand their vocabulary, become better readers, improve their writing skills and overall language competence, increase their motivation to read, develop learner autonomy, and become more empathetic (Donaghy, 2016). According to Elliott and Cheetham (2018), ER is the best method for encouraging reading fluency and increasing learner autonomy. Additionally, extensive reading has a significant positive impact on the writing performance of EFL learners, as stated by Ahour and Zarei (2016).

However, many academic institutions continue to struggle with the implementation of ER programs (Meniadio, 2021). For instance, students may avoid engaging in extensive reading due to a variety of reasons, including the pressure of schoolwork and the belief that such activities do not help them do better on exams or improve their academic performance (Huang, 2015). Walker (1997) mentions three major factors that may inhibit the development of reading in an English class: insufficient time allocated for reading, texts selected by teachers, and reading integrated into English courses at schools.

Arab learners face significant challenges with extensive reading. In Omani schools, for example, the primary focus of the reading class is on intensive reading, with students engaged in reading comprehension activities (Al Siyabi, 2013). Teachers do not encourage their students to read for pleasure because they stick to textbooks and prioritize task completion (Al Siyabi, 2013). According to the findings of Al Siyabi and Al Rashdi (2016), the frequency of reading among Omani school students is reported to be low. This lack of motivation towards reading can be attributed to their tendency to associate all reading activities with their academic obligations, as highlighted by Al Mahrooqi (2012). Several factors contribute to the low interest in reading among Omani students, including an excessive amount of homework and assignments that require completion at home, limited access to libraries, and high illiteracy rates among adults and parents (Al Musalli, 2014).

The situation remains the same for Omani first-year university students, who continue to regard reading as their weakest skill (Cobb, 1999). Students enrolled in the foundation program (FP) find reading to be the most boring skill. They lack motivation to read unless they are awarded marks for this task (Al Damen, 2018). Contrary to this, a study conducted by Al-Mahrooqi and Denman (2018) on ninety-five students at Sultan Qaboos University indicates that most of these students claimed reading to be a hobby. Additionally, the results show that most participants read one to three books a month, with an average reading of one to ten pages a day.

To promote extensive reading among Omani students at Sultan Qaboos University (SQU), an online tool called M-reader has been integrated into the university's Foundation Program. The current study seeks to investigate the issue of academic integrity on M-Reader.

2. M-READER

M-reader (available at <https://mreader.org>) is an online extensive reading tool created to help academic institutions implement an extensive reading program. It enables students to take 10- minute quizzes based on graded readers, with 10 randomly selected questions drawn from a large question bank, allowing each student to answer a different set of questions. To pass a quiz, students must answer at least six questions correctly. If students pass a quiz, the book cover of the story they have read will be visible on their own home page on the site. M-reader is flexible enough where students can read books at the same level set for them, one level below, or two levels above, until they are automatically promoted or manually promoted by their teacher.

A primary administrative function of M-reader is that it enables administrators and teachers to control how frequently students can take quizzes and what level of book difficulty they may take a quiz on. There are more than 8000 quizzes available on M-reader. Teachers can monitor their students' progress through extensive reading. Students and teachers can both keep track of the information about the titles of graded readers, their levels, and the number of words they read. More details can be found on the M-reader website: <https://mreader.org>.

M-reader is an effective tool that promotes extensive reading among students (McBride and Milliner, 2016; Al Damen, 2018). According to Allan (2014), M-reader is a motivational, accessible, and affordable tool. Furthermore, it requires little technical effort from both students and teachers (Al Damen, 2018). According to Rajabpour (2020), M-reader seems to be a great way of implementing extensive reading because it aligns with most of the pre-requisites for a successful ER program. One of the key benefits of M-reader is that it promotes learner autonomy among learners as it gives them the freedom to choose the stories and the time they want to take the quizzes. (Al Damen, 2018). M-reader also improves reading comprehension, vocabulary range, and reading speed (Rajabpour, 2020). According to Truscott (2017), M-reader adds accountability to ER by ensuring that students are reading and demonstrating adequate comprehension of the books. Moreover, studies show that M-reader motivates students to read more (Rajabpour, 2020; Al Damen, 2018; Suk, 2016).

2.1. Concerns about M-reader

Several issues have been reported with M-reader. Some of the most common are website freezing or slowness, difficulty finding books with corresponding quizzes, a confusing graded reader level chart, and the 24-hour interval between quizzes (Campbell, 2012). Another issue with M-reader is that some students may take a quiz based on a movie rather than reading the book. Thus, they can easily pass the quiz without the need to fully read the book (Ishimaki and Milliner, 2017). Rajabpour (2020) argues that teachers should not take M-reader for granted as being a perfect tool. He suggests that some changes should be made in terms of the number and diversity of books, as well as quizzes.

3. M-READER AT SULTAN QABOOS UNIVERSITY

In 2014, M-reader was introduced at the Centre for Preparatory Studies (CPS), at Sultan Qaboos University (SQU) in all levels of the foundation program (FP), as well as several of the English credit courses. The M-reader program, which is managed internally

and is an assessed curriculum component, starts in the third week of every semester, and concludes on the last teaching day. Students read a graded reader from the CPS library or the digital library and take the corresponding quiz on M-reader. Students access the website using their individual usernames and passwords and can track their progress on their profile page. A word goal is set for each level based on the expected level of reading proficiency. Table 1 summarizes the word goals for the English FP and credit courses offered at the CPS at SQU in the fall and spring semesters. FPEL is short for Foundation Program English Language, while the English credit courses are abbreviated as LANC.

Table 1. M-Reader Reading Goals for CPS Courses

Course	Word goal	Course	Word goal
LANC 1006	25,000	FPEL 0340	35,000
FPEL 1025	10,000	FPEL 0450	50,000
FPEL 1026	20,000	FPEL 0560	60,000
FPEL0120	15,000	FPEL 0603	60,000
FPEL0230	25,000		

4. ACADEMIC INTEGRITY IN ONLINE LEARNING

Academic integrity and ethics are essential elements of quality education (Parther, 2016). Fishman (2014) lists the core values of academic integrity as fairness, honesty, respect, courage, and responsibility. Due to technological advancements in the classroom and the growing popularity of online learning, e-cheating is becoming more widespread (Harmon and Lambrinos, 2008; King and Case, 2014). "E-dishonesty" refers to academic misconduct committed in an online environment. As a result, administrators and instructors might encounter new challenges they had never considered before. In recent years, concerns regarding online exams have increased. Exam leakages, impersonation, and using unauthorized resources (purchasing answers from others, searching the internet, accessing books and notes directly, contacting others), and tampering with the test management system or the laptop, are all examples of online academic dishonesty (Frankl et al., 2012; Moten et al., 2013; Wahid et al., 2015).

There are many reasons why students engage in academic dishonesty. One of the primary reasons is the existence of the culture of cheating among students who believe that cheating is a necessary practice to pass (Tolam, 2017). There are also several individual factors that contribute to online academic dishonesty. Some of these factors include the feeling of being incompetent or not appreciating the value of personal work (Jordan 2001; Wood, 2004; Akbulut et al., 2008); time pressure (Kaščáková and Kožaríková, 2022; Stengold, 2004); lack of motivation; the desire to get a high grade; the attitude of justifying unethical behavior like cheating, and the fear of making mistakes (Kaščáková and Kožaríková, 2022; Iyer and Eastman, 2008) In addition, academic dishonesty can be attributed to institutional factors which include insufficient penalization of academic dishonesty; lack of awareness of the academic integrity policies among students, teachers, and administrators; and lack of efforts made to raise awareness about academic integrity among students (Akbulut et al., 2008).

5. ACADEMIC DISHONESTY IN EXTENSIVE READING PROGRAMS

There is a possibility that students may resort to dishonest practices while doing extensive reading. In the context of extensive reading, students tend to employ five methods of cheating, which include seeking help from peers, reading material they are already familiar with, opting for movie versions instead of reading the actual book or story, relying on online sources instead of doing the actual reading, and skimming selected sections of the book (Tagane, et.al., 2018).

5.1. Mitigating academic dishonesty on M-reader

A major concern with M-reader is the issue of academic dishonesty, where students try to cheat the system (Bieri, 2015; Al Damen, 2018). Colluding is one popular form of cheating, where one student tries to take a quiz on behalf of another (Ishimaki and Milliner, 2017).

M-reader includes a built-in cheating detector similar to Turnitin, a system that alerts teachers to the possibility of copying from the same source by displaying the similarity percentage. The cheating detector on M-reader identifies two or more students who have read the same quiz within a short period of time using the same IP address. Once a passed quiz has been identified and marked for cheating by the administrator or teacher, its status will change to 'pending' and the word count will be removed. The built-in cheating detector is an effective deterrent measure, according to (Ishimaki and Milliner (2017). Furthermore, Figure 1 shows the 'check for cheating' feature available on the M-reader administrator's main page.

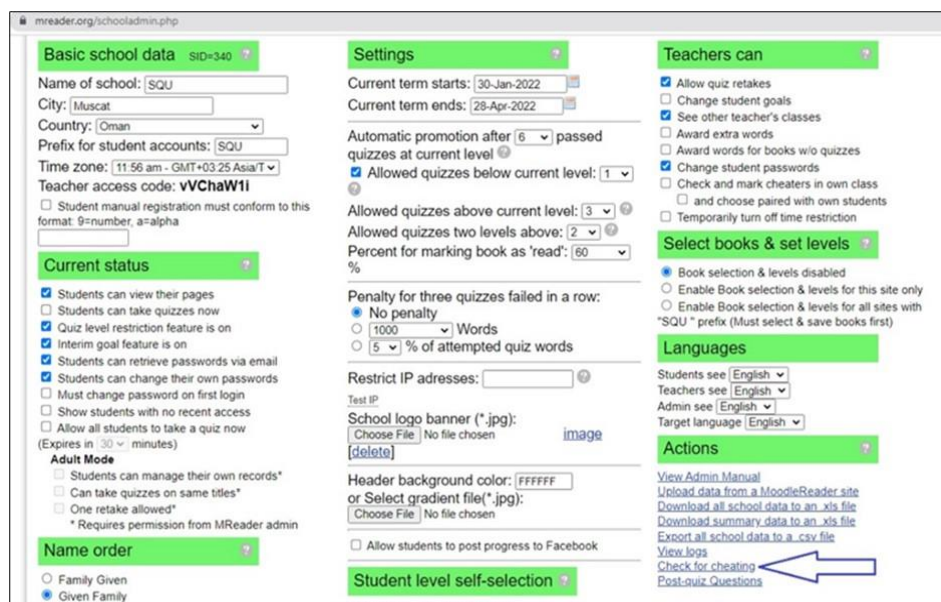


Fig. 1 The 'Check for Cheating' feature on M-reader

In addition, M-reader has another important feature that allows the administrators to set their desired selection of books. By this feature, unwanted stories, the ones based on movies, for example, can be unchecked from the list of selected books. Once selected, these quizzes will be removed from the M-reader quiz list, and students will no longer be able to take them as illustrated in Figure 2.

The screenshot displays the M-reader settings interface, divided into several sections:

- Settings:**
 - Current term starts: 11-Sep-2022
 - Current term ends: 20-Dec-2022
 - Automatic promotion after 6 passed quizzes at current level
 - Allowed quizzes below current level: 1
 - Allowed quizzes above current level: 3
 - Allowed quizzes two levels above: 2
 - Percent for marking book as 'read': 80%
 - Penalty for three quizzes failed in a row:
 - No penalty
 - 1000 Words
 - 5% of attempted quiz words
 - Restrict IP addresses: []
- Teachers can:**
 - Allow quiz retakes
 - Change student goals
 - See other teacher's classes
 - Award extra words
 - Award words for books w/o quizzes
 - Change student passwords
 - Check and mark cheaters in own class
 - and choose paired with own students
 - Temporarily turn off time restriction
- Select books & set levels:**
 - Book selection & levels disabled
 - Enable Book selection & levels for this site only
 - Enable Book selection & levels for all sites with "SQU" prefix (Must select & save books first)
- Languages:**
 - Students see: English
 - Teachers see: English

Fig. 2 The 'Select Books and Set Levels' feature on M-reader

Besides these two features, the CPS has taken further measures to mitigate academic dishonesty when using M-reader. Time constraints on taking quizzes have been implemented. Students can only take quizzes from 9:00 a.m. to 9:00 p.m., Sunday to Thursday. Time restrictions were imposed because it was discovered that most cheating cases occurred after midnight, when students had more time to collaborate and assist one another in taking M-Reader quizzes. In addition, other measures were taken, which include putting a reminder note on students' M-reader homepages and sending warning emails to suspected students who were identified through the cheating detection function. Additionally, this was emphasized in the M-reader workshops that were held for both students and teachers.

The current study, therefore, attempts to explore the effectiveness of the measures taken by the CPS in preventing academic dishonesty in M-reader. The students' perceptions of the measures taken to prevent cheating on M-reader will be analyzed and evaluated.

6. THE RESEARCH SITE

The study participants were Omani learners enrolled in the foundation program (FP) offered at Sultan Qaboos University (SQU), the first government university in Oman. The general foundation programs (GFPs) in Oman are designed to prepare high-school graduates for full-time undergraduate study. Higher education institutions (HEIs) in the Sultanate have implemented the GFPs to provide students with the necessary skills and knowledge to undertake a higher education program. The HEIs are required to provide a GFP that includes four components: English language, computing, mathematics, and general study skills (Oman Academic Standards, 2010). The Centre for Preparatory Studies (CPS) at SQU is one of the leading GFP institutions in Oman. With more than 3,000 students enrolled in the FP year, the

CPS was established to prepare students who join SQU to achieve the required educational goals. Besides, the CPS offers English credit courses and IELTS preparation. The Centre has three main academic departments, which include English for Humanities, English for Sciences, and Mathematics and IT. There are more than 250 teachers from 33 different nationalities who teach in the CPS.

7. RESEARCH QUESTIONS

This study aimed to answer the following research questions:

1. How reliable are the current measures to mitigate cheating on M-Reader?
2. What do students perceive as academic integrity on M-Reader?
3. Why do students engage in cheating on M-Reader?

8. METHODOLOGY

8.1. Research design

To answer the research questions of the present study, a quantitative approach was adopted. The primary source of data collection was an online questionnaire administered using Google Forms. The questionnaire was divided into three sections. The first section provided information about the purpose of the study, established the criteria for participating, and sought the consent of participants. The second section elicited opinions on five statements related to academic integrity on M-Reader, utilizing a 4-point Likert scale. Finally, the third section elicited opinions on cheating and the current measures in place to promote academic integrity on M-Reader, utilizing a combination of checkboxes, 4 and 5-point Likert scales, and a short-answer open-ended question. Prior to commencing the study, approval was sought from and granted by the Central Research and Conference Committee.

8.2. Participants

Due to the nature of the study, participants were required to “possess certain key characteristics that are related to the purpose of the investigation” (Dörnyei, 2007, p.99). Eligibility criteria required participants to be currently studying on the CPS Foundation Programme. A total of 229 students enrolled on the CPS Foundation Programme voluntarily participated in the study. Figure 3 shows the responses of all 229 participants confirming this criterion was met.

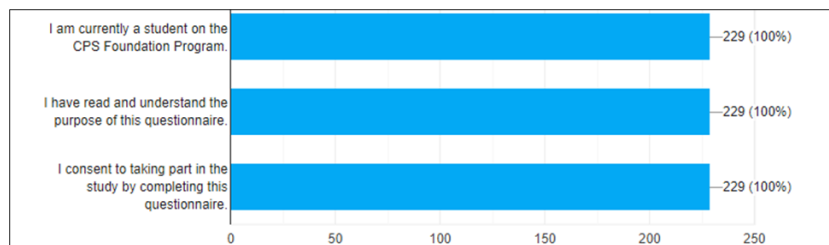


Fig. 3 Eligibility criteria ad responses

Participants were recruited for the study in three ways. Firstly, a notice was posted on M-Reader, which was visible to all courses and classes on the CPS Foundation Programme. The notice contained an overview of the study, its purpose, and a link to complete the questionnaire. Secondly, all students registered on M-Reader were emailed and invited to participate in the study. Finally, course leaders who are responsible for courses with an M-Reader component were emailed and asked to share the study with teachers on their course.

9. FINDINGS AND DISCUSSION

The findings of the study are based on the responses of the 229 participants to the survey. The data are presented in Tables 2 to 6, and the findings are presented and discussed in relation to the three research questions set out in the study:

1. How reliable are the current measures to mitigate cheating on M-reader?
2. What do students perceive as academic integrity on M-Reader?
3. Why do students engage in cheating on M-Reader?

9.1. The reliability of the current measures to mitigate cheating on M-Reader

Table 2 illustrates the breakdown of the responses to the statement “The measures taken to maintain academic integrity on M-reader discourage me from cheating”, in which respondents were asked to select strongly agree, agree, disagree, or strongly disagree. The five measures are the ones adopted by the CPS to address and promote academic integrity on M-Reader.

As evidenced by Table 2 data, the reminder note was most effective at discouraging cheating, with 192 strongly agree or agree responses (83.8%), followed by the warning email (74.2%), while closing M-Reader on weekends was considered the least effective (17.03%). This demonstrates that students were mostly dissatisfied with not being able to take the quizzes on weekends. The decision to close M-reader quizzes on weekends assumed that it may reduce cases of cheating among students, especially that large-scale cheating was reported during weekends and after midnight when students had less study pressure. Therefore, there is a compelling reason to believe that closing M-reader on weekends and having the quiz window from 9:00 am to 9:00 pm reduced, to a large extent, incidents of cheating among students.

Table 2. Reliability of current measures to mitigate cheating on M-Reader

Measures	SA	A	D	SD
Reminder notes on M-reader	45	147	29	10
Warning e-mail	57	113	49	19
Changing the quiz status from pass to pending	24	79	83	48
Quiz window form 9 am to 9 pm, Sunday to Tuesday	26	37	68	102
Closing M-reader at the weekend	11	28	57	138

SA = Strongly agree A= Agree D= Disagree SD= Strongly disagree

9.2. The reliability of the M-reader built-in features to mitigate cheating

The findings demonstrate that M-reader's built-in features, including the ‘check for cheat’ and the ‘select books’ are insufficient to mitigate the problem of academic dishonesty. The ‘Check for cheating’ feature was used by the M-reader administrators at the CPS to monitor and manage cases of suspected cheating among students. M-reader administrators periodically conducted manual searches. When suspected cheating was detected (two or more students had taken the same quiz from the same IP address within a short period of time), an ‘X’ was marked next to the students’ names to remove the allotted words, as indicated in the blue box. The students’ details have been obscured by the grey box (See Figure 4).



Fig. 4 The cheating detection feature on M-reader

As illustrated in Figure 5, a weekly report on suspected academic dishonesty was sent to the CPS library staff and the Head of the Student Support Committee with the actions taken. In such cases, suspected students were given a pending status, which means that they got a reduction on the word count of that story.

M-reader weekly report - October 17 to October 21							
Student Username	Student name	IP Address	Date and time of quiz	Interval between quizzes	Name of Course and Section	Name of Story	Status
1		62.231.244.200	10/17/2021 10:15	Same time	FPELO340s150	April in Moscow (Penguin)	Pending
2		62.231.244.200	10/17/2021 10:15		FPELO340s50		Pending
3		178.20.22.6	10/19/2021 19:55	9 minutes	FPEL1026s100	April in Moscow (Penguin)	Pending
4		178.20.22.6	10/19/2021 20:04		FPEL0230s040		Pending
5		62.231.244.201	10/20/2021 10:44	9 minutes	FPEH0450s080	April in Moscow (Penguin)	Pending
6		62.231.244.201	10/20/2021 10:53		FPEL1025s050		Pending
7		188.140.155.63	10/18/2021 12:18	9 minutes	FPEL1025s040	Ali and his Camera (Penguin)	Pending
8		188.140.155.63	10/18/2021 12:27		FPEL1025s040		Pending

Fig. 5 Weekly update on suspected cheating and measures taken

This was followed by a warning email sent to the concerned students, as shown in Figure 6. However, it was left to the teachers’ discretion to pass or fail the students after

doing further investigations through interviewing or asking students to give short presentations on the story of concern.

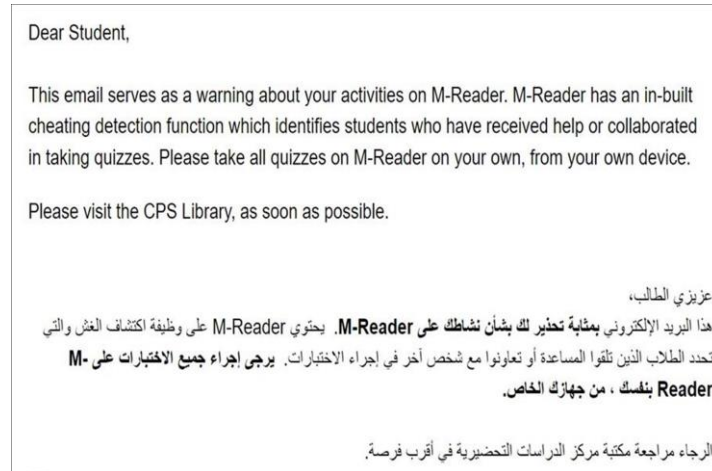


Fig. 6 Student warning letter

Theoretically, IP addresses help teachers and administrators identify suspects of cheating because it is assumed that each device has a distinct IP address. It was noticed that students, in general, use three locations to take the M-reader quizzes: campus, home, and student accommodation. Considering this, IP addresses were used as proof of cheating among students. However, while it seemed much easier to identify cases of collusion among students outside campus, i.e., at home, the case seemed to be more complicated with students using the university network. In fact, most students take M-reader quizzes while they are on campus (in the labs, classrooms, or female student accommodation) or at the male student accommodation which is located outside campus. It was found that computers in the labs share the same IP address. Additionally, if connected to the university network, students will be sharing the same IP address. This explains why many students from different courses and across genders shared one or two identical IP addresses (See Figure 7).

Student Username	Course name	Student name	IP Address	Date and time of quiz	Interval between quizzes	Name of Story
1	FPES0450s040		62.231.244.200	10/27/2021 20:12	8 minutes	The House on the Hill (Macmillan)
2	FPPEL0340s040		62.231.244.200	10/27/2021 20:18		
3	FPES0450s120		62.231.244.201	10/25/2021 08:41		
4	FPPEL0340s100		62.231.244.201	10/25/2021 08:48	7 minutes	Money for a Motorbike (Macmillan)
5	FPPEH0450s040		62.231.244.201	10/27/2021 20:01		
6	FPPEL0340s050		62.231.244.201	10/27/2021 20:04	3 minutes	Money for a Motorbike (Macmillan)
7	FPPEH0560s110		178.20.22.6	10/24/2021 20:21		
8	FPPEL0230s020		178.20.22.6	10/24/2021 20:23	2 minutes	Lost In New York (Penguin)
9	FPPEH0560s080		62.231.244.200	10/25/2021 17:50		
10	FPPEH0560s020		62.231.244.200	10/25/2021 17:58	8 minutes	Lost In New York (Penguin)
11	FPPEL1026s040		178.20.22.6	10/25/2021 19:31		
12	FPPEL0340s140		178.20.22.6	10/25/2021 19:39	8 minutes	Lost In New York (Penguin)
13	FPES0450s010		5.162.132.158	10/27/2021 19:00		
14	FPPEL0340s060		5.162.132.158	10/27/2021 19:05	5 minutes	Lost In New York (Penguin)
15	FPES0603s110		62.231.244.201	10/25/2021 08:43		
16	FPPEH0603s100		62.231.244.201	10/25/2021 08:45	2 minutes	Aladdin and the Enchanted Lamp (Oxford Bookworms)
17	FPES0560s060		37.40.9.91	10/25/2021 12:18		
18	FPES0560s080		37.40.9.91	10/25/2021 12:27	9 minutes	Aladdin and the Enchanted Lamp (Oxford Bookworms)

Fig. 7 A sample report on students with identical IP addresses

As illustrated in Figure 7, many students from different courses shared common IP addresses such as 62.231.244.200 and 37.40.9.91 on different days. So, it is not possible to confirm any incidents of cheating. IP addresses starting with 62 and 37 were locations on campus as shown in Figure 8.

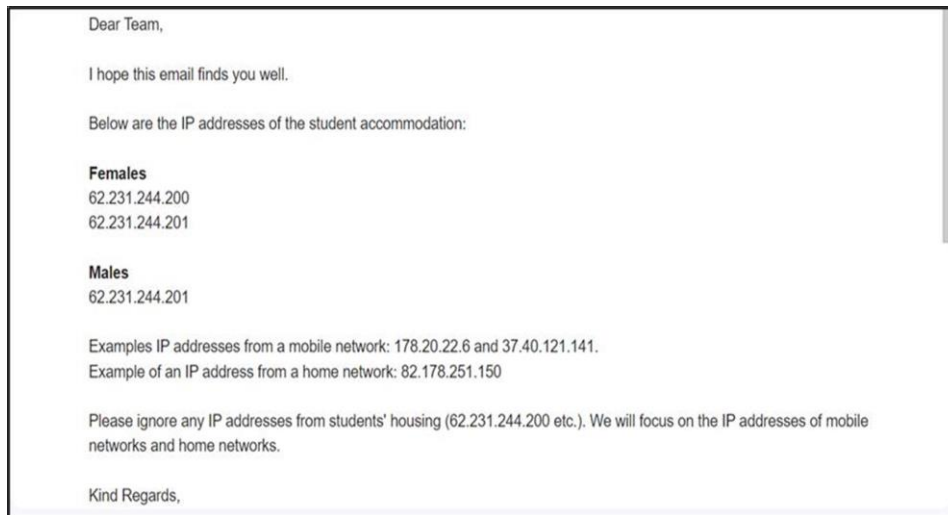


Fig. 8 Concerns about IP addresses: Communication to the M-reader team

Based on this, it can be concluded that the 'Check for cheating' feature seems to be effective in tracking down cheating suspects if they are using private IP addresses. In contrast, the feature does not seem to be efficient with students using public IP addresses such as the ones at the university. Most students take the M-reader quizzes while they are on campus using the university Wi-Fi. This makes it very difficult to identify incidents of cheating since most of them are using common IP addresses which belong to the university.

The other common form of academic dishonesty on M-reader is watching a movie version of the story rather than reading it comprehensively. Findings of this study agree with Ishimaki and Milliner (2017), who indicated that students could easily pass a quiz by watching the movie version of the story without the need to fully read the book. In this study, a story titled 'Matilda' was identified as one of the problematic stories, with a word count exceeding 39000. Alarming evidence indicated that many students preferred taking the quiz on Matilda although, assumingly, reading such a long story requires a lot of effort and time from them. Surprisingly, it was found that neither the CPS library nor the digital library had the story available. Despite this, M-reader records show that many students who took the quiz passed it, as explained in Figure 9.

Username	Given name	Family name	Class	Date	B-level	PubSeries	Title	Score	P/F/C	Words	Total Words
			FPES0560:080	2022/10/05	5	YL	Matilda	72.00%	P	39785	45025
			FPES0560:080	2021/10/19	5	YL	Matilda	77.00%	P	39785	42085
			FPES0560:080	2022/10/05	5	YL	Matilda	0.00%	F		0
			FPES0560:060	2022/10/02	5	YL	Matilda	77.00%	P	39785	116575
			FPES0560:040	2021/10/28	5	YL	Matilda	97.00%	P	39785	94694
			FPES0560:040	2022/10/05	5	YL	Matilda	62.00%	P	39785	39785
			FPES0560:040	2022/09/26	5	YL	Matilda	67.00%	P	39785	39785
			FPES0560:030	2022/10/04	5	YL	Matilda	65.00%	P	39785	48840
			FPES0560:030	2022/10/06	5	YL	Matilda	67.00%	P	39785	39785
			FPES0560:030	2022/04/03	5	YL	Matilda	67.00%	P	39785	96403
			FPES0560:020	2022/10/03	5	YL	Matilda	60.00%	P	39785	39785
			FPES0560:020	2022/10/03	5	YL	Matilda	75.00%	P	39785	39785
			FPES0560:020	2022/10/03	5	YL	Matilda	75.00%	P	39785	39785
			FPEH0560:080	2022/10/04	5	YL	Matilda	82.00%	P	39785	44271
			FPEH0560:080	2022/10/02	5	YL	Matilda	52.00%	F		0
			FPEH0560:060	2022/10/05	5	YL	Matilda	97.00%	P	39785	155756
			FPEH0560:040	2022/09/28	5	YL	Matilda	80.00%	P	39785	142532
			FPEH0560:030	2022/09/29	5	YL	Matilda	72.00%	P	39785	92255

Fig. 9 A list of students who the quiz on the story titled ‘Matelda’

Figure 9 showcases a sample of students from different courses who took the Matilda quiz on varying dates. Most of the students passed the quiz. However, upon further inquiry by the library staff, it was revealed that the students admitted to not having read the assigned story but instead relied on watching the movie adaptation. To effectively address this academic integrity issue, the M-reader administrators took an action by utilizing M-reader’s ‘Select Books and Set Levels’ feature, which allowed them to deselect unwanted stories (See Figure 2). As a result, the Matilda quiz was subsequently deselected from available quiz options in M-reader, prohibiting them from attempting it, as shown in Figure 10.

The screenshot shows a web interface for selecting books. Under the 'Roald Dahl' category, there is a 'Select/Deselect All' checkbox. Below it, a list of books is shown with checkboxes and their respective levels:

- 7 Charlie and the Chocolate Factory
- 7 Charlie and the Great Glass Elevator
- 6 Danny the Champion of the World
- 6 Esio Trot
- 4 Fantastic Mr Fox
- 5 George's Marvelous Medicine
- 7 James and the Giant Peach
- 5 Matilda
- 7 The BFG
- 4 The Enormous Crocodile
- 4 The Giraffe and the Pelly and Me
- 5 The Magic Finger
- 7 The Minpins
- 4 The Twits
- 8 The Witches

A green 'Save' button is located at the bottom of the list.

Fig. 10 The ‘Matilda’ story deselected on M-reader

This feature is thought to be very efficient in reducing incidents of academic dishonesty among students, particularly, for the stories which have movie adaptations. However, the process of deselecting stories could be time-consuming because all the stories and publishers must be manually selected first. Then, the unwanted stories can be deselected. Furthermore, it is extremely difficult to identify all the stories with movie adaptations.

9.3. Students' Perceptions of Academic Integrity on M-reader

The first set of questions in the survey were aimed at eliciting students' perceptions of academic integrity on M-reader. Participants were asked to indicate their opinion of five statements related to academic integrity on M-reader by selecting strongly agree, agree, disagree, or strongly disagree. Table 2 provides a breakdown of participants' responses.

Table 3. Students' perceptions of academic integrity on M-reader

Statement	SA	A	D	SD
It is important that all students attempt quizzes on their own.	109	92	27	10
Strict measures should be taken to prevent cheating on M-reader.	47	100	60	29
It is acceptable for students to take a quiz together.	30	101	72	30
It is easy to cheat on M-reader.	27	70	86	49
It is acceptable for a student to take a quiz for another student.	21	47	102	64

SA: Strong Agree A: Agree D: Disagree SD: Strongly Disagree

As shown in Table 3, 201 participants strongly agree or agree that it is important for all students to attempt quizzes on their own, while only 37 do not believe that it is important for them to take the quizzes alone. This key statement is included in all M-reader student documents shared on the Foundation Programme. It is also reiterated in a note on all M-reader student profiles. This means that most students are aware that they must take the M-reader quizzes on their own without collaborating with others. In response to a related statement, that it is acceptable for students to take quizzes together, 131 strongly agree or agree, while 102 disagree or strongly disagree. This result is surprising as FP students are supposed to be aware that any form of collaboration in taking M-reader quizzes constitutes academic dishonesty, and they are also expected to be aware of the implications for doing so. The students' responses seem to be contradictory. On the one hand, most respondents (84.5%) believe it is imperative to take M-reader quizzes alone. On the other hand, many respondents (56.2%) feel that taking the quizzes together is an acceptable practice. This contradiction may be due to students' perceptions of what constitutes academic dishonesty. To some of them, student collaboration during assessments is more about helping one another rather than cheating. In addition, 147 respondents (62.3%) strongly agree and agree that strict measures need to be taken to prevent cheating on M-reader. At the same time, 135 respondents (57.9%) believe that it is not easy to cheat on M-reader.

9.4. Reasons Why Students Cheat on M-reader

Participants were asked, "In your opinion, what are the reasons why students cheat on M-reader?" They were asked to select all that apply from nine options and invited to add their own opinion. As shown in Table 4, obtaining the full marks was the most selected option, having been selected by 190 participants. This was followed by the reason that

students have a lot of coursework to complete, with 153 responses. The third most selected reason was that students start reading late in the semester. The top three reasons given represent 83%, 66.8% and 54.6% of responses respectively.

Table 4. Reasons why students cheat on M-reader

Reasons	No. of responses
They want to reach the word goal and get full marks.	190
There is a lot of other coursework to complete.	153
They start reading late in the semester.	125
Reading is boring.	99
M-reader quizzes are less important than other assessments.	95
It is difficult to manage one's time.	94
There is no proper teacher supervision on M-reader quizzes	60
It is challenging to work autonomously.	50
M-reader quizzes are difficult.	37

The first reason, that is, the concern about marks, seems to be the main motivator for students to do the M-reader quizzes. Students obtain a total of 4 marks in the course they are studying if they reach the word goal by the end of the semester. Therefore, there is a good reason for the students to try to achieve the word goal through cheating, i.e., asking other students to take M-reader quizzes for them. The reason selected by the lowest number of participants is that M-reader quizzes are difficult. Participants were also asked to suggest other reasons. Interestingly, the 12 suggestions given were related to the nine options given.

9.5. Student satisfaction with the anti-cheating measures on M-reader

Participants were asked to rate their level of satisfaction with the measures taken to promote academic integrity on M-reader. As explained in Table 5, the participants are mostly dissatisfied with not being allowed to take M-reader quizzes at the weekends, with 162 dissatisfied or very dissatisfied responses (70.8%), followed by 149 for taking quizzes within time constraints from 9:00 am to 9:00 pm (65.1%), while receiving warning e-mails is considered the most satisfying measure, with 106 responses (46.3%). In addition, students are mostly somewhat satisfied with having reading reminder notes posted on the M-reader homepage, with 99 responses (43.2%).

Table 5. Student satisfaction with the anti-cheating measures on M-reader

Measure	Leve of satisfaction				
	1	2	3	4	5
Quiz window from 9:00 am to 9:00 pm, Sunday to Thursday	20	16	44	33	116
Closing M-reader at weekends	17	21	29	29	133
Reminder notes on M-reader homepage	36	50	99	27	17
Changing the quiz status from 'passed' to 'pending'	19	31	81	48	50
Sending warning emails to suspected cheaters	43	63	71	30	22

1= very satisfied 2= satisfied 3= somewhat satisfied 4= dissatisfied 5= very dissatisfied

10. LIMITATIONS OF THE STUDY

Although this study revealed significant findings, a few limitations were found. The major limitation of this study is that since the scope was limited to the perceptions of students, it did not collect data on the perceptions of teachers. In addition, the generalizability of the study is limited due to the relatively small sample size. Another limitation is that students were not interviewed to gather qualitative data on their perceptions of academic integrity on M-reader and how cheating can be effectively addressed. Furthermore, it was not possible to assess the relationship between learner autonomy and academic integrity in online assessments.

11. CONCLUSION

The purpose of the study was to examine the reliability of the measures taken to mitigate cheating on M-reader as well as students' perceptions of what constitutes online academic integrity. To measure the reliability and effectiveness of such measures, student responses to an online survey were collected and analysed. In addition, samples of the measures were thoroughly investigated.

Findings of the study reveal that the M-reader built-in features such as the 'check for cheat' is unreliable since depending on the IP addresses alone in identifying potential cheaters proved to be inaccurate. On the other hand, blocking unwanted stories for students seems to be a more effective option. However, the process of deselecting stories on M-reader is time-consuming as it needs to be done manually. Besides, it is not possible to identify all the stories with movie versions. In addition, giving quiz time-restrictions and closing M-reader at weekends might help maintain academic integrity. Nevertheless, this could be at the expense of the students' learner autonomy as they are not given complete freedom to choose the time they wish to take the quizzes. In addition, reminder notes might raise students' awareness of academic integrity. However, reminder notes alone might not stop academic misconduct among students. Findings also show contradictions in the students' perceptions of academic integrity and what measures they accept as effective and suitable to mitigate this issue.

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