

New Media Literacy of School Students in Singapore

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ABSTRACT

This study sought to develop a conceptual framework for new media literacy, and examine Singapore youths' new media literacy. We developed a two-way continuum framework involving ten fine-grained indicators to represent the four quadrants of new media literacy: functional consuming, critical consuming, functional prosuming, and critical prosuming literacy. We developed and validated a self-report instrument. From the data obtained through this instrument, we constructed a set of norms for evaluating the profiles of Singapore students' new media literacy profiles. Singapore school students were found to be well-equipped with new media skills and consuming media literacy, and their new media literacy was generally related to factors such as grade level, dwelling type and time spent online rather than gender.

INTRODUCTION

Singapore's government recognizes the importance of the global new media culture and the need to prepare the younger generation to meet the demands of living and working with new media. However, there is a lack of consensus on the meaning and scope of new media literacy, as well as reliable quantitative instruments to measure new media literacy. Hence, this project aimed to develop a conceptual framework for new media literacy and to examine Singapore youths' new media literacy. Our conceptual framework would inform further studies, and our findings would serve as baseline information for MOE's future policy development.

RESEARCH DESIGN

This study was a large-scale survey. One pilot study and one full study were carried out in this project. Prior to the pilot study, we conducted a critical review of the literature to arrive at 10 fine-

KEY IMPLICATIONS

- The study provided a conceptual framework for a refined understanding of new media literacy.
- The study provided a set of norms for viewing the profiles of new media literacy expressed by Singapore school students. Schools can compare their students' profiles with the norms.
- The instrument developed in this study can be a very useful and convenient tool for measuring students' new media literacy in different cultures or educational systems.

grained indicators of new media literacy. We then designed items to measure these 10 indicators. Item analysis, reliability/validity analysis, and confirmatory factor analysis were performed on the data collected from the pilot study and only validated items were retained for the follow-up full study. Participants' new media literacy was assessed through their responses to the questionnaire items in the validated instrument. Besides the analysis performed on the data from the pilot study, structural equation modeling was used to confirm the theoretical framework we developed for new media literacy. In addition, we used descriptive statistics to examine the relationships between students' new media literacy and other factors such as gender, grade level, social-economic-status, and time spent online.

KEY FINDINGS

An Exploratory Framework for New Media Literacy

Generally, the construct "new media literacy" can be represented as a two-way continuum (Chen, Wu, & Wang, 2011). The four quadrants of the two-way continuum are (a) functional consuming, (b) critical consuming, (c) functional prosuming, and (d) critical prosuming. Functional consuming refers to the ability to gain access to new media and understand what is conveyed. Critical consuming literacy refers

to media consumers' ability to consider the social, economic, political and cultural contexts of media content. Functional prosuming literacy involves the ability to participate in the creation of media content, while critical prosuming literacy focuses on media users' contextual interpretation of media content when participating in media activities. The four quadrants of the new media literacy framework were represented by 10 indicators. More importantly, the framework suggests a new divide that differentiates a Web 1.0 from a Web 2.0 environment with respect to prosuming media literacy, with the Web 2.0 marking users' responses to a new era of media participation (Lin, Li, Deng, & Lee, 2013).

An Instrument for Measuring New Media Literacy

Based on the framework below (Figure 1), a self-report instrument was developed to measure Singapore students' new media literacy. We used three different types of 5-point Likert type scales across 10 dimensions but maintained the same type within each dimension. The instrument was validated by data obtained from students from Primary 4 to Secondary 3 in the pilot and full study, and proved to have good reliability and validity. It consisted of 10 dimensions with 60 items in the finalized version.

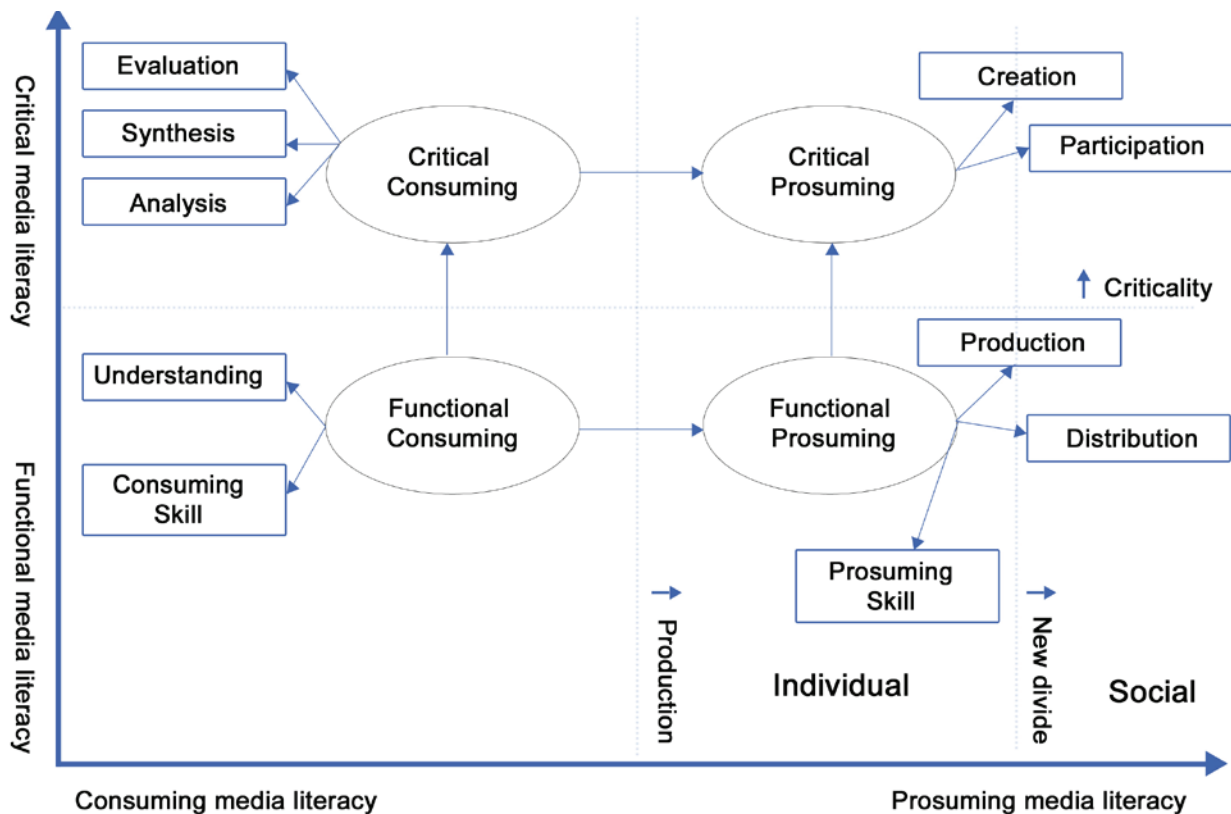


Figure 1. The conceptual framework of new media literacy.

Table 1. The conceptual framework of new media literacy (primary level).

Grade level		Functional consuming	Critical consuming	Functional prosuming	Critical prosuming	
Primary 4 (N=892)	Mean	3.59	2.77	2.24	2.16	
	Std. deviation	.92	.86	.91	.98	
	Percentiles	10	2.50	1.67	1.22	1.00
		25	3.00	2.14	1.51	1.40
		50	3.57	2.72	2.03	2.00
		75	4.33	3.36	2.83	2.80
90		4.83	3.94	3.56	3.6	
Primary 5 (N=890)	Mean	3.73	2.97	2.44	2.39	
	Std. deviation	0.97	.83	.95	.99	
	Percentiles	10	2.33	1.86	1.28	1.20
		25	3.17	2.33	1.67	1.60
		50	4.00	2.97	2.28	2.20
		75	4.50	3.56	3.03	3.00
90		4.83	4.06	3.83	3.80	
Primary 6 (N=976)	Mean	4.01	3.17	2.60	2.52	
	Std. deviation	0.95	0.82	0.93	0.99	
	Percentiles	10	2.83	2.10	1.50	1.40
		25	3.67	2.58	1.87	1.80
		50	4.17	3.14	2.42	2.40
		75	4.67	3.77	3.17	3.20
90		5.00	4.28	4.03	4.00	

Singapore School Students' New Media Literacy

The results suggest that Singapore students are well-equipped with new media skills, which refer to consuming skill and prosuming skill. All participants showed rather high mean scores on the consuming skill and prosuming skill. Table 1 and 2 contains primary students and secondary students' mean scores on the four quadrants of new media literacy. The percentiles shown in the table can be used as a norm for interpreting new media literacy profiles of students at specific grade levels in Singapore schools. As we can see from Table 1 and 2, about 50% of the Primary 4 students had a mean score

less than 2.72 for critical consuming. If Primary 4 students from a particular school score a mean lower than 2.72, the school may need to consider teaching/ learning practices to raise students' critical thinking ability.

It should be noted that the norms and the survey instrument cannot be used for individual diagnostic purposes due to the nature of the instrument. We would suggest that the survey be used with at least one class of more than 30 students. Furthermore, the "norms" are not fixed. They may vary over time due to the rapid development of technologies, new

Table 2. The conceptual framework of new media literacy (secondary level).

Grade level		Functional consuming	Critical consuming	Functional prosuming	Critical prosuming	
Secondary 1 (N=704)	Mean	3.93	3.03	2.53	2.43	
	Std. deviation	0.92	0.79	0.87	0.95	
	Percentiles	10	3.00	2.00	1.51	1.20
		25	3.50	2.45	1.86	1.60
		50	4.00	3.06	2.42	2.20
		75	4.67	3.60	3.08	3.00
90		5.00	4.07	3.76	3.80	
Secondary 2 (N=579)	Mean	3.83	3.16	2.71	2.53	
	Std. deviation	1.02	0.72	0.88	0.94931	
	Percentiles	10	2.50	2.22	1.64	1.40
		25	3.50	2.67	2.03	1.80
		50	4.00	3.17	2.58	2.40
		75	4.50	3.64	3.25	3.20
90		5.00	4.08	3.94	4.00	
Secondary 3 (N=538)	Mean	3.87	3.19	2.60	2.49	
	Std. deviation	0.98	0.72	0.79	0.88	
	Percentiles	10	2.83	2.22	1.67	1.40
		25	3.67	2.67	2.00	1.80
		50	4.00	3.21	2.50	2.40
		75	4.50	3.67	3.09	3.00
90		5.00	4.17	3.69	3.60	

media ecology and practice. Therefore, they should be interpreted in a cautious manner. When scores that depart drastically from the norms are observed, the need to update the norms should be considered.

Factors that Affect Singapore School Students' New Media Literacy

We found that Singapore students' new media literacy bears little relation to gender, but is associated with grade level, social-economic-status (SES) and time spent online.

A developmental increment trend in the four types of new media literacy from Primary 4 to Primary 6

was evident. This can be due to older students' greater exposure to new media in and out of school contexts. Primary 6 seems to be a notable turning point. A possible explanation could be that some social media (e.g., Facebook) have a specific requirement for users' age (e.g., > 13 years old), thus giving post-Primary 6 students more opportunities to access social media to consume and prosume media content. Furthermore, students from higher income families scored higher on all types of new media literacy. A likely reason is that students from families with higher SES tend to have more access to new media and more opportunities to consume and presume media content. We also found that with more time spent online, either during a regular

school week or a holiday week, students tended to score higher on the four types of new media literacy. However, all these findings and their respective explanations need to be substantiated with further investigations.

IMPLICATIONS

For Policy

Since the instrument is validated, MOE could commission a longitudinal study to capture data for a longer period of time (e.g., 3 consecutive years) to monitor progress in students' new media literacy. Second, international partners could be invited to adopt the instrument for international comparative studies to see how Singapore students stand in comparison with students from other nations. The results of comparative studies, used in tandem with design-based research to improve students' new media literacy, would inform MOE's crafting of policy conducive to further development of students' new media literacy.

For Practice

Firstly, the norms presented in the findings can be used to interpret the new media literacy profiles manifested by Singapore school students. That is, schools can compare their students' profiles with the norms. Second, the instrument developed in this study can be a useful and convenient tool for measuring individuals' new media literacy within different cultures, educational systems, and domain/disciplines.

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