Chinese Children’s Belief of Information on Homework, News and Social Media Related Websites/apps

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Abstract. As part of a questionnaire about Chinese children’s media use, Chinese children’s beliefs about information on websites and apps for homework, for news and for social media was analysed. In 2018, 404 children aged 5 to 14 years from Shandong Province completed a questionnaire for their school homework. The majority of children tended not to trust online information on these three types of websites/apps. There was an age-related decrease in children’s trust in these websites/apps. A comparison with British children’s beliefs about the online information on these three types of websitesapps, showed that there was also an age-related decrease in trusting these three types of website. Trusting is related to the ability to critically assess such web sites which, in turn, is related to children’s cognitive development. The latter should be considered when designing online systems to protect children.

Introduction

Today’s children have been called ‘digital natives’ as they have unprecedented use and access to multiple media in an information explosion age [1,2]. To illustrate, the latest UK’s Ofcom report in 2018 [3] shows that more than nine out of ten children aged 5 to 15 years old go online via multiple devices. The rate and average time of UK children (aged 5-15) online increases with age (See Fig. 1). In China, according to the CNNIC report in 2018 [4], there were about 25.5 million children younger than 10 years old, accounting for 3.3% of online users, going online by the end of December 2017.

![Figure 1. British children’s Internet use pattern in 2018.](image)

Previous research into children’s understanding of the Internet suggested that the age rather than the online experience were closely associated with US children’s understanding of the Internet [5,6]. Children younger than 8 years old are regarded as a group of vulnerable online users due to their
underdeveloped cognitive skills, limited online experience and knowledge [5]. The majority of older children, aged 14 to 17 years old, have a partial understanding of the technical and social complexities of the Internet [6]. Moreover, the Ofcom report in 2017 [7] reported children’s understanding of online content among UK children aged 8 to 11 years old and 12 to 15 years old who had visited school work related websites/apps, news related websites/apps, and social media related websites/apps. It demonstrated that the majority of each age group have visited these three particular types of websites/apps, and about a quarter in each age group believed all the information shown on these three types of websites/apps was true [7]. To find out whether children’s difficulty in understanding the Internet was specific to one culture or not, we also adopted three questions from Ofcom (2017) and measured Chinese children’s understanding of homework, news and social media related websites/apps.

Methods

Participants

The data of Chinese children’s understanding of online content (homework-related/news-related/social-media-related) was from a questionnaire conducted in 2018. In the study, 404 children aged 5-14 years were recruited from Shandong Province, PR China. Table 1 shows the demographic factors of participating children. The study had received ethics approval from the Department of Psychology Ethics Sub-Committee at the University of Sheffield. Permissions had been obtained from the school headmaster, main class teachers and parents before conducting the study.

| Age   | Gender | N   | %  |
|-------|--------|-----|----|
| 5-7   | Female | 58  | 14.4% |
|       | Male   | 56  | 13.9% |
|       | Total  | 114 | 28.2% |
| 8-11  | Female | 80  | 19.9% |
|       | Male   | 77  | 19.1% |
|       | Total  | 157 | 38.9% |
| 12-14 | Female | 64  | 15.8% |
|       | Male   | 69  | 17.1% |
|       | Total  | 133 | 32.9% |
| Total |        | 404 | 100% |

Materials

We adapted questions from Ofcom’s Children and Parents’ Media Use and Attitude Report in 2017, (with the permission of Ofcom). In this current paper, we are considering part of the results: chose three questions which examined Chinese children’s belief in the truthfulness on three types of websites/apps. Q1: “When you go online do you believe that all of the information you see from sites or apps for school work or homework is true, most of it is true or just some of it is true?” Q2: “When you go online do you believe that all of the information you see from sites or apps for news is true, most of it is true or just some of it is true?” Q3: “When you go online do you believe that all of the information you see from sites or apps for social media (e.g. Youku) is true, most of it is true or just some of it is true?”. We used the same scale from Ofcom (2017) (1=All is true, 2=Most is true, 3=Some is true, and 4=I do not know) to measure.

Procedure

After acquiring permission from school, parents and children themselves, children were given the questionnaire as part of their homework to complete, and asked to submit it to their main class teacher for the first author to collect on the next day.
Results

Chinese Children’s Belief in the Truthfulness in Websites/apps Used for Homework, News and Social Media.

Three items measuring ‘children’s belief in the truthfulness of school-related, news-related and social-media-related websites/apps’ were chosen to measure children’s belief of online information from three types of websites/apps. Table 2 shows the factor eigenvalue, communities of each item, and the proportion that children chose ‘all information on these three websites/apps was true’ respectively. All three items significantly correlated at least 0.4 with each other, suggesting a reasonable factorability (See Table 2). The Kaiser-Meyer-Olkin (KMO) measure checked the sampling adequacy for the analysis, KMO = .67 and the KMO value for each item was > .69, which indicated the sample size was adequate for factor analysis. The Bartlett’s test of sphericity \( \chi^2 (3) = 222.54, p<.001 \), indicated and the correlation between items were sufficiently large for the principal component analysis. Finally, the communalities were all above 0.5, which further confirmed that each item shared some common variance other items. Hence, the factor analysis was suitable with these three items. After running the principal components analysis, the eigenvalues of Factor 1 was over Kaiser’s criterion of 1 and it could explain 63% of total variance.

Table 2. Children’s understanding of online content.

| Factor 1 (Eigenvalue = 1.90; Variance explained = 63.22%; Cronbach’s alpha = 0.707) | Questions | All is true | Communalities |
|---|---|---|---|
| **Children’s belief of the truthfulness of school-related, news-related and social-media-related websites/apps** | | | |
| Correlation | Age | Age |
| Q1 Children’s belief of homework-related websites/apps | 1 | .41* | 7.9% | 3.2% | 0.8% | .67 | .60 | .60 |
| Q2 Children’s belief of news-related websites/apps | 1 | .46* | 12.3% | 11.5% | 6.0% | .65 | .55 | .66 |
| Q3 Children’s belief of social-media-related websites/apps | 1 | 7.9% | 10.2% | 5.3% | .77 | .67 | .52 |

Comparison of Chinese and British children’s belief in the truthfulness in websites/apps used for homework, news and social media.

There were no sufficiently detailed data on British children from the Ofcom (2017) report, Fig. 1 shows only an approximate comparison of the proportion of children who believed all information was true on the websites/apps used for homework, news and social media.

Figure 2. The proportion comparison of children who chose ‘all is true’.

![Proportion comparison of children who chose 'all is true'.](image-url)
As shown in Fig. 2, younger children are generally more likely to believe the online information was true than older children in both China and UK. Around one in five in each age group of British children tended to believe all the information on homework-related websites/apps was true, while less than one in ten in each age group of Chinese children believed that all information on homework-related websites/apps was true. There were more British children than Chinese children who believed all the information shown on news-related websites/apps was true in both age groups, while the situation reversed for the social-media-related websites/apps.

Discussion

The findings of age-related changes in children’s belief of the trustfulness on homework-related, news-related and social-media-related websites/apps are consistent with the previous literature on children’s understanding of the Internet [5,6], and such age-related changes are not specific to one culture. Results suggest that the majority of participating Chinese children is less likely to believe all the information on these three types of websites/apps is true, which is also consistent with Ofcom’s UK report and indicate more children generally hold a sceptical attitude to online information.

Although only a minority of children believe all the information on homework-related, news-related and social-media-related websites/apps is true, children still have difficulties understanding the Internet content due to their limited knowledge about the Internet and their underdeveloped cognitive skills. Hence, the developmental factors should be taken into account and use a variety of strategies rather than the filtering strategy to protect children online. For example, previous research has suggested that the restricted level of filtering system should be weakened as children grow up [5,6]. Specifically, the highest filtering system should be applied for users younger than 8 years old to decrease the negative online experience. The educational introduction about the Internet should be added and coordinated with the filtering system to decrease the negative direct online experience and increase the positive indirect online experience for children aged 8 to 12 years old. A less restricted filtering system, a monitoring system and Internet use curriculums should be implemented for children older than 12 years old [5,6].

Previous research indicates that children are able to distinguish web advertising and its content by the age of about 12 [8]. Further research should take this assumption into account and investigate when children could distinguish the advertising and content on homework-related, news-related and social-media-related websites/apps, and whether there is a difference in children’s beliefs of the online advertising and the content information on these three types of websites/apps. Moreover, parents, peers and school teachers are three major social agents that influence children’s direct and indirect online experience [9,10]. Further research should examine whether there is a parent or peer effect to children’s belief of the online information on homework, news and social media related websites/apps.

In conclusion, children’s belief of the trustfulness on homework-related, news-related and social-media-related websites/apps decrease with their age, and this was the case in both China and the UK. To protect children online, multiple strategies and children’s cognitive development pattern should be considered when developing Internet safety programs for children.

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