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What's on your Mind? Impact of Online Education on Students' Mental Wellness

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Abstract

Due to the pandemic, institutions shifted online and away from in-person classes. Online education implementation and integration require adjustments and pedagogical skills. Overcoming social-distance protocols and ensuring education continues is one side. How students adapt needs more study. Stable internet and devices and hours in front of computers require careful consideration. Using a 4-point Likert scale and a self-made validated questionnaire on factors affecting mental wellness, with a reported internal consistency of 0.73, the present study differentiated mental wellness of respondents in terms of their age and sex through ANOVA, and identified factors affecting mental wellness of 100 online Filipino students, evaluated through percentage, mean, and SD, who participated in this mixed method study, which combined quantitative and qualitative research design. Most disagreed with and viewed online education as more difficult than in-person, which had significant effects on their mental wellness, from losing motivation to work on tasks to feeling less effective in lessons. Some had mental breakdowns, anxiety, and considered dropping out. Online education is a possible solution to continue learning until normalcy returns, but questionable in countries where thousands of households lack a stable internet connection and means to buy online education gadgets. Policymakers must create a positive education landscape considering everyone's welfare while educators are enjoined to innovate.

Keywords: COVID-19 pandemic, Learning environment, Mental breakdowns, Mental wellness, Online education, Secondary students.

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Contents

Contribution of this paper to the literature
While the identified factors that affected online students' mental wellness serve as a foundation for educators and policy makers to establish a more inclusive policy on the implementation of online education, with the cooperation of the school and other stakeholders, maintaining online learners' holistic development is possible with online education.

1. Introduction

The onset of the coronavirus pandemic brought changes to the whole world since it spread like wildfire in early 2020. Economies (Peralta et al., 2022), businesses (Tibon, 2022), trade (Solis & Tadeo, 2022), industrial developments (Tecson, 2022) and education (Simon, 2022) were affected. Some aspects of societies were hit hard that caused unimaginable losses (Bradbury et al., 2022). Since usual face-to-face learning cannot be implemented in full due to the risk of contagion (Tordillo & Romupal, 2022), schools adapted online education (Brillantes, 2022) and ways to continuously deliver quality learning in spite of threats of the pandemic. This headed the realization of online education, relying heavily on technology and internet use (Greenhow, Graham, & Koehler, 2022). In the Philippines, the country was unprepared for a nationwide move to online education (Cabardo, Cabardo, & Cabardo-Mabida, 2022) including the fact that families cannot afford a reliable internet connection (Deocadez & Gayoles, 2022). According to recent studies, most Philippine schools adopted the new learning system (Lopez, Agustin, & Bag-oyen, 2022). Keeping students' mental wellness stable is another pandemic-related challenge (Rasheed, Fatima, & Tariq, 2022; Treceñe, 2022). This study examines how online education affected students' mental wellness. This study helps institutions since it identifies elements that affect students' mental wellness and gives statistics on online education problems. This study helps students understand their mental wellness and helps teachers balance online education. Results help administrators adapt or design online education policy.

2. Literature Review

2.1. State of Education

The pandemic kept children out of classes (Shah, Fatima, & Akhtar, 2022). Online education was the alternative (Babbar & Gupta, 2022). Teachers must employ delivery strategies (Geverola, Mutya, Siason, & Bonotan, 2022). As claimed by Dela Pena-Bandalaria (2020) integrating information and communications technology (ICT) into online education improves education quality and ensures technology-driven teaching systems since it optimizes an enhanced delivery of education. Teachers and students use technologies to maximize learning (Lamsal, 2022). Due to the virus spreading, educational sectors globally adopted online education (Batulan, Trazo, & Dumdum, 2022) allowing lessons to continue and ensuring students' learning. According to a survey, the Philippines was unprepared for online education because most of the learners don't have an internet connection or a computer (Mariden, 2022). The Department of Education (DepEd) mandated modular and online education despite problems (Berbesada & Rondina, 2022; Tugano, Tria, & Tonio, 2022). The country's structure poses challenges, but the teaching and learning also depend on instructors' adaptation of innovative online pedagogy.

First-week online education boomed (Babbar & Gupta, 2022). Data showed students appreciated the setting (Cowan et al., 2022). Learning faded over time. Students questioned the online setting and distributed memes with complaints (El Filali, 2022; Somoano, 2022). COVID-19 revisions bored students (Pacaol & Siguan, 2022). Li and Dewaele (2020) found students to feel less bored in online than their in-person classes. Social and environmental factors induced ennui among students (Mousavian, Roohani, & Mirzaei, 2022). Escalating numbers of pandemic patients, cases, and countries stoked public panic. Social separation contributed to boredom. Being housebound caused worry (Perroy, Velasco, Gurchani, & Casati, 2022). When institutions switched to online education, they lost the benefit of face-to-face interaction. In-person meeting conventions and absence of actual connections hindered students (Balaza, Cruz, Ferraren, Cañares, & Avila, 2021).

2.2. Challenges of Online Education

Online education allows teaching and learning via the Internet or e-devices, which is far from traditional teaching and learning scenario (Pañares, Villanueva, Manzon, & Villar, 2022). In this setup, educational experiences using devices with internet access (Fortuna, 2022) students learn anywhere. For education, it uses the Internet (Tleuken et al., 2022), chat services (Kuhns & Dockray, 2022), texts (Morgan, 2022) and conferencing (Dash & Kuddus, 2022). Online education demands a wealth of resources, with teachers acting as instructors rather than content transmitters, and ICT considered as a physical resource to boost interest and learning (Wang & Torrisi-Steele, 2022). In certain communities, schooling is traditional, but requires improvement (Kim & Cho, 2022). Changing needs require global education to adapt.

2.3. Advantages of Online Education

Technology improves education (Danh, 2022). Online education requires versatile tools. Effective and secure learning involves internet tools (Lamsal, 2022). Teachers use text and audio-visual materials (Galy, Downey, & Johnson, 2011). This helps students give feedback, clarify, and master lessons (Cheriguene, Kabache, Kerrache, Calafate, & Cano, 2022; Warfvinge, Löfgreen, Andersson, Roxå, & Åkerman, 2022). Online education is improved by multiple platforms and tools. Online education allows participation anytime, anywhere (Azevedo, Lopes, Liberato, & Liberato, 2022). Online education saves money, time and resources in situations (Badge, Dawson, Cann, & Scott, 2008) like COVID-19 (Sumadi, Hidayat, & Agustina, 2022). Through online education, access to education becomes less expensive since learning materials are uploaded online compared to purchasing them at stores (Hjeltnes & Hansson, 2005). It is cheaper than classroom education (Pallavi, Ramachandran, & Chinnasamy, 2022). Learning individually saves time (Alalmai, Fatma, Arun, & Aarif, 2022). Students spread schedules but follow calendars. With the online education, students get the advantage to personalize their learning schedules like in prioritizing which homework to do first (Chan, Hogaboam, & Cao, 2022). Students with different coping and learning styles struggle to follow instructions (Setlhodi, 2019). Others prefer visual to audio learning (Shi, Revithis, & Chen, 2002). Online education is one of the best ways to create a pleasant learning environment

(Moreno, Sandoval, & Torres, 2022). Professionals take lessons online (Kraiger, Fisher, Grossman, Mills, & Sitzmann, 2022). Working adults struggle to study. Online education allows them to learn without quitting careers (Roberts, 2006). Online course selection depends on the needs and interests of the learners (Kadirbergenovna, 2022).

2.4. Disadvantages of Online Education

The change to online education presents various obstacles (Bora, 2021). Accessing and downloading materials isn't enough. Since learners have access and control on their computers at home, they tend to be overrelaxed that they missed deadlines and that they overlapped schedules. This is easy for experienced users. Course start-up is difficult and time-consuming. Since online education depends on internet connectivity and functional devices, technical glitches delay course completion (Lamsal, 2022). Despite improvements in certain places, many of the learners remain to experience to unstable internet connection. Without a steady internet connection, instructor and student lose continuity (Abbadi, Hefny, & El-Shafy, 2022). In-person learning is better. Students online communicate with instructors, but lack social contact. It lowers teacher and peer guidance. Online education is limited by the instructor's technological skills (Nikolopoulou, 2022). Tech-savvy teachers are needed. Teachers struggle to adjust to online pedagogy. Stress causes anxiety. Non-expert students and professors fear online education (Yaghi, 2022). Beginners have physical and emotional effects. Long use is required. Screen time promotes eye strain, improper posture, etc. (Ekemiri et al., 2022). Not all subjects can be taught online (Syam & Achmad, 2022). Social sciences and humanities do better than medical sciences and engineering, limiting some fields (Bora, 2021).

2.5. Mental Wellness of Students

With the pandemic, students are at risk to experiencing high anxiety, sadness, and mental stress (Bogardus, Blackinton, Litwin, Nelson, & Mitchell, 2021; Faisal, Jobe, Ahmed, & Sharker, 2022; Regehr, Glancy, & Pitts, 2013). Previous research demonstrated that people exhibit adverse emotional reactions like anxiety and despair during COVID-19 pandemic (Choi & Kim, 2022; Gaeta, Gaeta, & Rodriguez, 2021; Zhou et al., 2020). COVID-19 is an example of a public health emergency that has psychological repercussions on students, such as panic, anxiety, poor sleep quality and eventually diminished life satisfaction (Patrono et al., 2022). Since the start of the outbreak, the virus has been global concern, even surpassing the number of Severe Acute Respiratory Syndrome (SARS) cases in 2003, which is a contagious illness manifested by fever, cough, pneumonia and respiratory failure (El-Shabasy, Nayel, Taher, Abdelmonem, & Shoueir, 2022). In the Philippines, all in-person classes were eliminated, and institutions transitioned to modular and online education, which had many repercussions in various parts of the academic community that could have had a direct impact on psychologically-related issues (Bustillo & Aguilos, 2022; DeDios, 2022). Overworked students developed emotional issues (Gumarang, 2022). In fact, most of students felt overburdened with multiple online coursework and some teachers don't structure learning objectives and activities well (Bishaw, Tadesse, Campbell, & Gillies, 2022; Chen et al., 2022). Online students lobbied for support and help due to overloaded class assignments. Schoolwork kept them from interacting physically.

Online education lacks face-to-face interaction, hindering communication (Ayawan, Duyapat, & Martin, 2022). Many questioned heavy learning circumstances without social support that caused emotional and mental issues. Online learning failed (Romli, Foong, Hong, Subramaniam, & Wan Yunus, 2022). Some students negotiated with professors to reduce responsibilities. Students lost community stability and social support needed for a healthy mind (Fathima & Sushruthi, 2022). Pandemic disruptions induced anxiety and panic among students (Aparajita, Cherukuri, & Ashwin, 2022). COVID-19 influenced pupils' mental wellness (Faisal et al., 2022; Gundogan, 2022). Chinese college students (25%) are anxious (Elharake, Akbar, Malik, Gilliam, & Omer, 2022). In Bangladesh, undergraduates, especially living with family in urban areas, suffer mild to severe depression (Faisal et al., 2022). Online students in the Philippines were anxious (Mahinay, Rollan, Punzalan, Reyes, & Tus, 2022). Bangladeshi university students (47%) suffered severe depression, and 70% reported mild to severe psychological distress (Bora, 2021).

2.6. Mental Wellness in the Gender Sphere

Pandemic and health interventions, such as self-quarantine, impair social relationships and empathy (Gammel & Wang, 2022). Support is limited, which exacerbates females' stress (Kurudirek, Arıkan, & Ekici, 2022). Females were more anxious. Social inequality, which assigns most domestic responsibilities to women, causes distress. Females care for children, parents, and relatives. Lockdown chores elevated females' stress and anxiety (Alhasani, Alkhawaji, & Orji, 2022). Women are more prone than males to feel mental wellness effects of loneliness (Ali et al., 2021). According to Wu et al. (2020) females are more sensitive to mental and emotional stress and have stronger emotional reactions. AlAzzam, Abuhammad, Abdalrahim, and Hamdan-Mansour (2021) revealed female and older students were more depressed and worried. Females risked major depressions (Kim et al., 2022). Females report more online education stress, isolation and poor mood, focus, motivation and performance. Females were more likely than males to confess COVID-19 harmed their education (Prowse et al., 2021). First-year women in informal settlements are prone to emotional and mental issues. Social, intellectual, mental, spiritual and physical wellness impact emotional and mental wellness (Visser & Law-van, 2021).

2.7. Mental Wellness in the Age Spectrum

Young people and children should not neglect the mental impacts of COVID-19. Younger students became sensitive to sadness, stress and anxiety (Ali et al., 2021), which reduced online education connection. Younger students are more worried about skipping online education than older students who fear for their future. Younger pupils may miss online education more. According to AlAzzam et al. (2021) older ones are gloomier and more jittery than younger ones. Older students reported increased impulsivity, sadness, and subjective well-being (Lin, 2020). Copeland et al. (2021) found that younger children and those who did not participate in wellness programs

were most affected mentally by the pandemic. Younger students may need more one-on-one time (Imran, Zeshan, & Pervaiz, 2020) as they adjust to the new normal.

3. Research Objectives

This research focuses on (1) identifying various factors that affect mental wellness of online secondary students and (2) differentiating mental wellness of online secondary students in terms of age and sex.

4. Methodology

4.1. Design

Through the use of an online survey tool, this study employed the mixed method design, which includes quantitative supplemented by qualitative research design. A total of 100 secondary students in the Philippines were surveyed in December 2021.

4.2. Participants

A total of 100 online secondary students in the Philippines participated in a survey questionnaire facilitated through an online tool. Participants gave consent and were informed of the purposes and other related concerns. The respondents were mainly female, comprising 68% of participants. The study population was dominated by students aged 16-17 years old (43%). The mean age was 15.2 years old. Table 1 presents the sociodemographic characteristics of the respondents in terms of their sex and age.

Table 1. Sociodemographic characteristics of respondents.

Variables	Category	Count	Percent
Sex	Male	32	32%
	Female	68	68%
Age $\bar{x}$=15.2 SD=1.68	12-13	21	21%
	14-15	29	29%
	16-17	43	43%
	18-20	7	7%

4.3. Instrument

The study utilized a 4-point Likert scale (4-Strongly Agree, 3-Agree, 2-Disagree, 1-Strongly Disagree), self-made validated questionnaire on factors affecting mental wellness in respective domains: workload and online education requirements, distractions from online education, motivation towards online education, feeling towards online education, convenience in the use of technology and the Internet, and socialization during online education. Also collected were their sexes and ages. A trial survey tested the questionnaire's validity. The final questionnaire had 34 items in five sub-domains. The first component asked their sex and age; and, the second assessed their mental wellness. The reported internal consistency was 0.73, qualifying the questionnaire as being acceptable.

4.4. Analysis

Raw data was evaluated through percentage, mean, and SD. One-way Analysis of Variance (ANOVA) compared respondents' mental wellness in terms of their age and sex.

5. Results and Discussions

This research investigated factors that influenced the mental wellness of online secondary students in the Philippines. Descriptive data were utilized to identify elements that affected mental wellness of Filipino secondary school students owing to online education (mean and standard deviation). Table 2 the identified factors affecting students' mental wellness are given and described. Similarly, Table 3 presents and describes summarized viewpoints of students regarding online education.

Table 2. Factors affecting students' mental wellness during online education.

Factors	Mean	SD	Description
Workload and Online Education Requirements	2.98	0.56	Agree
Distractions from Online Education	2.75	0.31	Agree
Motivation towards Online Education	2.70	0.48	Agree
Feeling towards Online Education	2.25	0.69	Disagree
Convenience in the Use of Technology and Internet	2.51	0.51	Agree
Socialization during Online Education	2.41	0.83	Disagree

Note: 1.00–1.74=Strongly Disagree; 1.75–2.49=Disagree; 2.50–3.24=Agree; 3.25–4.00=Strongly Agree.

This study covers secondary students' workload and online education requirements. Over 80% agreed that workloads were too heavy. When online education is taxing, time-consuming, difficult and aggravating, the likelihood of not completing tasks grows (Therisa & Sony, 2022). In similar research, children had a heavy workload, and teachers didn't manage goals and activities well (Bishaw et al., 2022; Chan et al., 2022). Engaging tasks, well-prepared educators and good design motivate students. This study found participants generally agree ($\bar{x}$=2.70) with statements "getting frustrated and having no urge to work on their tasks" when asked about their level of motivation toward online education. Pekrun, Lichtenfeld, Marsh, Murayama, and Goetz (2017) argued while previous research showed unfavorable emotions hinder learning, cumulative tension and worry brought on by the pandemic easily demotivate and disengage student learning.

Confirming further respondents' reply regarding factors affecting mental wellness, qualitative analysis of data gathered from respondents was grouped into five themes. Based on the data, all responses were grouped into themes and core ideas yielded a negative perspective on online education as summarized in Table 3.

Table 3. Respondents' perspectives on online education.

Themes	Core Ideas
Stress and Anxiety	Difficult to cope [up] Anxious in submitting tasks Failure to submit tasks Not setting priorities to do tasks
Tiredness and Burn out	More workloads with less time Stayed up night to finish requirements Doing tasks only before due date
Drain and Exhaustion	Self-taught Time pressured Few extensions for deadlines were given
Disadvantage	No socialization No motivation to do tasks Having responsibilities while at home instead of devoting oneself studying
Difficulty in learning	Teachers do not discuss thoroughly Difficulty in reaching out the teachers Students learn on their own Modules are not enough to grasp lesson Limited technology and internet connectivity Did not learn much

How people see online education today is disturbing. According to the survey, participants don't appreciate online education. Even though there is no explicit literature on how much students like online education, research on student satisfaction suggests they have concerns afterward. A respondent admitted:

> *"Exhausting and it negatively affects my mental health. I did not learn much compared to when we have face-to-face classes. It's tiring and no fun."*

In consonance, when the Philippines transitioned to online education, this impacted psychological difficulties (Bustillo & Aguilos, 2022; DeDios, 2022). Overworked students became emotional (Gumarang, 2022). Some teachers don't structure objectives and activities well, which frustrates students (Bishaw et al., 2022; Chen et al., 2022). Students must adapt to greater autonomy to feel comfortable in an online setting. Familiar may be flexible, reliable and responsive. Respondents in this study felt they are acclimated to online education in terms of flexibility, time consciousness and accountability. This may be because online education is seen as more of an inconvenience due to factors such as readiness and self-motivation (Chiu, Lin, & Lonka, 2021; Pekrun et al., 2017).

Table 4. Difference between the mental wellness of students when grouped according to sexes.

Assessed Mental Wellness	Mean	SD	df	F	p
Workload & Online Education Requirements					
Female	3.029	0.512	1.99	1.569	0.213
Male	2.879	0.648			
Distractions from Online Education					
Female	2.699	0.342	1.99	6.599*	0.012
Male	2.867	0.210			
Motivation towards Online Education					
Female	2.788	0.434	1.99	7.194**	0.009
Male	2.518	0.538			
Feeling towards Online Education					
Female	2.123	0.674	1.99	7.498**	0.007
Male	2.516	0.660			
Convenience in the Use of Technology and Internet					
Female	2.435	0.507	1.99	5.060*	0.027
Male	2.675	0.476			
Socialization during Online Education					
Female	2.276	0.790	1.99	5.969*	0.016
Male	2.700	0.849			

Note: *$p<0.05$ **$p<0.01$.

A series of one-way ANOVA was conducted at 5% level of significance, and preliminary assumption testing on normality and homogeneity of variance among others was executed without serious infraction. Table 4 presents highly significant differences between males and females in terms of feeling ($F_{(1,99)}=7.498$, $p<0.01$) and motivation towards online education ($F_{(1,99)}=7.194$, $p<0.01$). Males ($\bar{x}=2.516$, SD=0.660) tend to have better reception for online education than females ($\bar{x}=2.123$, SD=0.674). In a similar study, Wu et al. (2020) suggested that women are more susceptible to mental and emotional stress than males, and their emotional reactions are also more intense. Likewise, the percentage of women that considered their online education to have been hampered was higher than that of males (Prowse et al., 2021). Meanwhile, girls ($\bar{x}=2.788$, SD=0.434), on average, are more frustrated by online education than boys ($\bar{x}=2.518$, SD=0.538). As Ali et al. (2021) reported, negative consequences of loneliness on a person's mental wellness are more likely to be experienced by girls than boys. In parallel, Alhasani et al.

(2022) revealed females exhibited more anxiety and frustrations caused by social inequity, which places the majority of domestic tasks on girls when lockdown tasks and frequent studying increased tension and anxiety.

Table 4 also shows significant differences exist between the sexes in terms of how they perceive themselves on facing distractions from online education ($F_{(1,99)}$=6.599, $p<0.05$), how they socialize during online education ($F_{(1,99)}$=5.969, $p<0.05$) and how they perceive convenience technology and the Internet during online education ($F_{(1,99)}$=5.060, $p<0.05$). Statistically, boys ($\bar{x}$=2.516, SD=0.660) see themselves to be more distracted on other things during online education than girls ($\bar{x}$=2.867, SD=0.210). While there are various causes of male students' distractions, Oittinen, Háhn, and Räisänen (2022) revealed the presence of phones cause distraction due to regular or non-habitual use and their desire to be up-to-date with mobile games.

Further, when it comes to self-belief on being socially active during online education, males ($\bar{x}$=2.700, SD=0.849), on average, lead over females ($\bar{x}$=2.276, SD=0.790). In unison with the findings of Oittinen et al. (2022) they acknowledged non-habitual phone use to check incoming messages and explore social media, especially when the online lecture was boring, the phone was used to multitask and find more interesting online materials. Moreover, boys ($\bar{x}$=2.675, SD=0.476), on average, are more inclined than girls ($\bar{x}$=2.435, SD=0.507) when it comes to seeing technology and the Internet as being convenient during online education. Similarly, Magogwe, Mokibelo, and Karabo (2022) found students who identified as male reported higher levels of self-assurance when utilizing the Internet. In support of the findings of the present study, Areşan and Ţîru (2022) reported boys utilize various forms of technology.

Table 5. Difference between the mental wellness of students when grouped according to ages.

Assessed Mental Wellness	Mean	SD	df	F	p
Workload & Online Education Requirements					
Below the mean age	2.920	0.599	1.99	1.206	0.275
Above the mean age	3.043	0.517			
Distractions from Online Education					
Below the mean age	2.745	0.321	1.99	0.056	0.813
Above the mean age	2.760	0.311			
Motivation towards Online Education					
Below the mean age	2.657	0.470	1.99	0.836	0.363
Above the mean age	2.746	0.498			
Feeling towards Online Education					
Below the mean age	2.297	0.637	1.99	0.486	0.487
Above the mean age	2.200	0.745			
Convenience in the Use of Technology and Internet					
Below the mean age	2.512	0.448	1.99	0.000	1.000
Above the mean age	2.512	0.565			
Socialization during Online Education					
Below the mean age	2.320	0.797	1.99	1.235	0.269
Above the mean age	2.504	0.857			

Successions of One-way ANOVA were carried out to compare the effects of assessed mental wellness. Table 5 shows that there insufficient evidence to conclude significant differences exist in the respondents' ages in terms of reception to workload and requirements during online education ($F_{(1,99)}$=1.206, $p>0.05$), reaction to distractions from online education ($F_{(1,99)}$=0.056, $p>0.05$), motivation towards online education ($F_{(1,99)}$=0.836, $p>0.05$), feeling towards online education ($F_{(1,99)}$=0.486, $p>0.05$), convenience of technology and internet utilization ($F_{(1,99)}$=0.000, $p>0.05$) and socialization during online education ($F_{(1,99)}$=1.235, $p>0.05$). This is because the present study's respondents were dominated by 16-17 year old students. Students younger than 22 had an easier time navigating the Internet and its platforms since they were more accustomed to using them and were younger (Noor, Singh, Agarwal, Mansoori, & Ansari, 2022).

6. Conclusion

The pandemic impacted education. Public health required adaptation. This study revealed online programs may not have considered all the difficulties. Whether it's workload, instructional approach, social isolation, or internet device, the truth remains that online education doesn't meet students' needs, the research revealed. Online setup and consequences frustrated students. Most said online education is difficult, made them lose interest, disconnected them and caused internet and power interruptions. Wants and inadequate lessons hurt mental wellness. Mental breakdowns and anxiety lead others to stop and become uninspired. The data showed that students struggled to understand classes. Despite limited internet and computer access, participants felt overwhelmed. Online education favors the privileged in a country where many houses lack internet access and learning tools. Wellness is important, hence there should be less work for teachers and students. Learning-teaching method, instructor competence, participants' attention, online education environment, and time management affect online education motivation. The researchers advise examining teachers and students without internet or technology, comparing online and in-person academic accomplishment, and expanding the age range of respondents.

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