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A Survey of Online User Perspectives and Age Profile in an Undergraduate Fundamental Business Technology Course

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***Abstract*—**Over the past few decades, more and more students choose to enroll in online classes instead of attending in-class lectures. While past studies consider students' attitudes towards online education and how their grades differed from in-class lectures, the profile of the online student remains a blur. To shed light on this, an online survey was administered to about 1,500 students enrolled in an undergraduate Fundamental Business Technology course at a Canadian University. The survey was comprised of questions on students' demographics, their reasons for choosing online courses, their expectations towards the course, the communication channels they use for the course with fellow students and with the instructor. This paper focused on the research question: Do the perspectives of online students concerning the online experience, in general, and in the course in particular, differ according to age profile? After several statistical analyses, it was found that age does have an impact on the reasons why students select online classes instead of in-class. For example, it was found that the perception that an online course might be easier than in-class delivery was a more important reason for younger students than for older ones. Similarly, the influence of friends is much more important for younger students, than for older students. Similar results were found when analyzing students' expectation about the online course and their use of communication tools. Overall, the age profile of online users had an impact on reasons, expectations and means of communication in an undergraduate Fundamental Business Technology course. It is left to be seen if this holds true across other courses, graduate and undergraduate.

***Keywords*—**Communication channels, fundamentals of business technology, online classes, pedagogy, user age profile, user perspectives.

I. Introduction

WITH the continual development of technology, the traditional classroom is being increasingly augmented by, or supplanted by, different levels of online course delivery. This is becoming more marked with the advent of mobile technology and use of social media. The body of research over the years from meta-analyses performed tends to show a preference by students for traditional face-to-face classes compared to online delivery [1]-[4], but no appreciable difference in terms of performance, or a mixed bag in some instances, [5]-[9], [1], [3]. This points to a need for deeper understanding of the factors that contribute to its successful implementation, such as students' perspectives and attitudes toward online courses, the use of social media, and their age profile, among others.

When it comes to online education, [10] discuss the importance of non-traditional students. They define the non-traditional student as someone, who works full time and has little flexibility in his/her daily schedule. Researchers believe that the average age of the successful non-traditional students to be 25 years [11] or older [12]. Other researchers found that online courses are more likely to be pursued by students at the graduate level [13] or around the age of 30 years [14]. However, earlier research suggested the demographics of online students to be shifting towards younger, more traditional aged students [15].

As for the preferred communication channel with the instructor, online students admitted to using email [16], [17]. Students believe that by using email, they maintain the necessary level of professionalism with professors [18], [19] and establish the limits between personal and academic lives. References [20] and [21] suggest students that use social media platforms, such as WhatsApp, Skype and Facebook for communication purposes with other students, will benefit from a better learning experience. Other research [22], also found that not only do students seek community even in an online course, but that, when students use certain social media tools, their perceived contribution to the activities and resources used in the course to the development of various team-building skills is impacted.

Some prior research also seems to indicate that students' perspectives and attitudes towards online courses influence their experience with them [23]-[25]. For instance, while students, regardless of personality trait, preferred in-class courses to online courses, they had different perspectives towards various aspects of the delivery of a quantitative course.

This study examines some of these issues and whether age profile plays a role in these perspectives.

II. The Study

The course under study is a Fundamental Business Technology course, which is a prerequisite course for the undergraduate business program at a Canadian university, designed to give students an understanding of the

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fundamentals of information technology (IT). The course deals with IT topics and issues that are relevant to most industries. The course focuses on both theory and practice, and is delivered entirely online through a series of virtual tutorials, e-books and practical experience in a virtual laboratory. On the course website, students can collaborate with the instructor or the teaching assistants through direct email and the question center. In terms of communication with classmates, students can use once again the question center or other social media channels.

For the last three years, students taking the course were asked to fill out an optional online survey posted on the course website for bonus points of 2%. In order to identify some of the characteristics of online students, a survey instrument was developed. The questionnaire was divided into several sections, such as demographics, expectations, reasons for taking online courses, communication channels used, influence of family and friends, and overall impressions towards online courses. The focus of this study is to better understand the expectations and reasons motivating online users and detect if the age of the users plays a role.

III. Results

A. Demographics

A sample of 1491 respondents was obtained with 49.63% female students and 50.37% male students. The average age was found to be 21.44 years, with a standard deviation of 3.6 years. The age distribution is found in Table I, where we note that 57.14% of respondents are between the age of 20 years and 24 years (20-24), and only 3.96% are 30 years old or older (30+).

TABLE I
AGE DISTRIBUTION OF RESPONDENTS

Categories	% Frequency	Frequency
Less than 20	27.50	410
From 20 to less than 24	57.14	852
From 24 to less than 30	11.40	170
30 and more	3.96	59
Total	100	1491

B. Expectations

The respondents were asked what they expected to gain from this specific business technology course. They were offered several suggestions and asked to choose the options that best represent their expectation about the course. They could select more than one option. Some of the suggested options have been studied in previous research, in particular related to higher-order thinking skills and team-building skills [22], [25].

Results in Table II reveal that, not surprisingly, E9: Understanding IT better, has the highest frequency of selection at 56.67%, overall. However, the frequencies differ according to age groups. Only 53.17% of the younger group of respondents indicated that option, while the more senior group had a frequency of 67.80%.

Options E5, E8 and E4, *Hands on experience on technical skills*, *Specialized knowledge in the subject matter* and *General knowledge in social/ humanity and information technology*, respectively, are the next three favorite options in terms of overall frequencies.

TABLE II
EXPECTATIONS ABOUT THIS FUNDAMENTAL BUSINESS TECHNOLOGY COURSE BY AGE GROUP

What students expect from this course	Age groups (years)				
	<20	20-24	24-30	30+	Total
E1 Communication skills	10.24%	10.33%	10.59%	3.39%	10.06%
E2 Critical thinking skills	9.51%	11.97%	8.82%	8.47%	10.80%
E3 General knowledge in business	17.07%	18.31%	16.47%	10.17%	17.44%
E4 General knowledge in social/humanity, IT	23.66%	26.41%	30.59%	23.73%	26.02%
E5 Hands-on experience on technical skills	**29.27%**	**29.81%**	**34.71%**	**32.20%**	**30.32%**
E6 Learning more self-directed learning	16.83%	18.54%	18.82%	15.25%	17.97%
E7 Problem solving skills	15.85%	15.26%	15.88%	10.17%	15.29%
E8 Specialized knowledge in the subject	31.95%	29.11%	28.24%	30.51%	29.85%
E9 Understanding IT better	53.17%	57.63%	56.47%	67.80%	56.67%

It is interesting to note that the level of support for option E5: *Hands-on experience on technical skills* is 5% higher for the 24-30 category than for the younger groups. Also for option E4: *General knowledge in social/ humanity and information technology*, the support is 4% to 6% higher for the 24-30 category than all other age groups. However, the option E8: *Specialized knowledge in the subject matter* is less of an the expectation for students in the 20-24 category than for the other groups

With respect to the higher-order thinking skills and team-building skills options, E1: *Communication skills*, E2: *Critical thinking* and E7: *Problem-solving skills*, have the lowest levels of expectation and the minimum is achieved with the older group of students.

For the two youngest age categories, the least popular of their expected outcomes is E2: *Critical Thinking skills*, while E1: *Communication skills* is least expected by the 20-24 age group and the older group. The older respondents 30+, least expect the development of skills such as E1: *Communication skills*, E2: *Critical Thinking skills*, E3: *General Knowledge in Business*, E6: *Learning to be a more self-directed learner* and E7: *Problem Solving skills.*

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C. Reasons for Taking Online Courses in General

Although the group of students registered in the course under study did not have the choice to take it online instead of in-class, their opinion about online courses in general is studied. This sample of respondents is very interesting since they all have some exposure to online courses, even if it is only for the current course. Students were asked about their reasons for taking online courses in general. Respondents were offered nine reasons, and asked to identify their most important reasons, in addition to the option R10*: Other reasons*, and asked to identify their most important reasons.

TABLE III
REASONS FOR TAKING ONLINE COURSES BY AGE GROUPS

Reasons for taking the class	Age groups <20	20-24	24-30	30+	Total
R1: Easy course	**8.54%**	7.98%	5.88%	0.00%	7.58%
R2: Flexible schedule	28.78%	33.22%	37.06%	**38.98%**	32.66%
R3: Heard it was easy to get A	**8.78%**	7.75%	5.88%	1.69%	7.58%
R4: Important topic to learn	16.10%	**18.43%**	15.88%	16.95%	17.44%
R5:More self-directed learning	5.85%	7.63%	**10.00%**	6.78%	7.38%
R6:Unavailable in-class course	32.44%	30.05%	24.12%	**35.59%**	30.25%
R7: Friends are taking it	**9.51%**	6.57%	4.12%	0.00%	6.84%
R8: Personal preference	12.68%	18.90%	**20.00%**	13.56%	17.10%
R9: Recommended by friends	13.66%	**17.61%**	12.35%	1.69%	15.29%
R10: Other reasons	25.61%	26.88%	**30.00%**	28.81%	26.96%

The results in Table III are categorized by age groups. In Table III, the strongest support for each proposed reasons is indicated in bold. The top two reasons overall why students take online courses were R2*: Flexible schedule* with 32.66% and R6: *No available traditional in-class course equivalent* at 30.25%. A relative large proportion of respondents, 26.96%, did not find their reasons for taking a course online on the list provided and indicated R10: *Other reasons*. It is interesting to note that the support for some of the reasons for taking an online class seems to decrease with age. It is the case for the following three reasons: R1: *Easy course*, R3: *Heard it was easy to get A*, and R7: *Other friends are taking it also*. Older students do not value as much those reasons for taking an online course. The opposite trend is observed for R2: *Flexible schedule*, where the level of support for that reason increases with age. For the youngest category of respondents, those less than 20 years of age, the most supported reason with 32.44% is: R6: *No available traditional in-class course equivalent*, while their least favored reason is R5: *More self directed learning*. Additionally, the second main reason why students aged 24 years to 30 years take online classes seem to be because of E10: *Other reasons*, not captured in the list provided. Students in the last age category seem to be less influenced by R7: *Other friends are taking also* and R1: *Easy course*, but value more R2: *Flexible schedule.*

D. What Communication Channels Do Students Prefer?

1. With Classmates

The survey included questions on which communication channels students preferred to use when reaching out to classmates for general requests (Table IV), for course-related questions (Table V), as well as when reaching out to instructors (Table VI). Once more, the results were analyzed in terms of age groups.

Based on Table IV, we can observe that overall, students' preferred communication channels with their classmates are: C4: *Face-to-face*, C5: *Phone*, and C2: *Email*. However, it is important to state that students younger than 20 years give a stronger level of support to the use of C3: *Facebook* instead of C2: *Email* to communicate with classmates.

TABLE IV
COMMUNICATION CHANNELS WITH CLASSMATES BY AGE GROUPS

Channels	Age groups <20	20-24	24-30	30+	Total
C1: *Chat*	12.93%	11.15%	7.06%	1.69%	10.80%
C2: *Email*	23.17%	26.17%	**26.47%**	16.95%	25.02%
C3: *Facebook*	30.24%	19.84%	13.53%	10.17%	21.60%
C4: *Face-to-face*	**36.59%**	**33.10%**	21.18%	**18.64%**	32.13%
C5: *Phone*	35.37%	27.82%	15.88%	13.56%	27.97%
C6: *Question center*	11.71%	11.38%	10.59%	11.86%	11.40%
C7: *Skype*	6.83%	3.40%	3.53%	0.00%	4.23%
C8: *Other*	8.29%	10.56%	15.88%	15.25%	10.73%

Furthermore, students aged 24 years to 30 years, give more support to C8: *Other communication channels* than to C3: *Facebook*, C6: *Question center* and C1: *Chat*. That is also true for those older than 30 years, who select C8: *Other channels* instead of C5: *Phone*. The use of the following communication channels with classmates: C1: *Chat*, C3: *Facebook*, C4: *Face-to-Face*, C5: *Phone,* C6: *Question center* show a decline in use with increase in age. As identified in bold, the favorite channels for each category of age is identified. C4: *Face-to-face*, is selected for all groups of age, except for 24-30, where C2: *Email* is preferred.

2. About Course Material

As observed in Table V, the most popular communication channel for course material is: C4: *Face-to-Face*, followed by C5: *Phone* and C2: *Email*. For all age groups, as identified in bold, C4: *Face-to-Face* is the most popular option, with a decreasing level of support as the age increases.

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TABLE V
COMMUNICATION CHANNELS FOR COURSE MATERIAL BY AGE GROUPS

Channels	Age groups				
	<20	20-24	24-30	30+	Total
C1: *Chat*	15.61%	13.62%	9.41%	3.39%	13.28%
C2: *Email*	16.59%	22.89%	23.53%	20.34%	21.13%
C3: *Facebook*	27.80%	19.25%	8.82%	10.17%	20.05%
C4: *Face-to-face*	**41.46%**	**31.69%**	**25.29%**	**22.03%**	**33.27%**
C5: *Phone*	33.66%	30.99%	15.29%	20.34%	29.51%
C6: *Question center*	10.49%	11.62%	14.12%	13.56%	11.67%
C7: *Skype*	4.88%	3.64%	2.94%	1.69%	3.82%
C8: *Other*	7.32%	8.92%	12.35%	11.86%	8.99%

It is interesting to see that students younger than 20 years of age selected C3: *Facebook* with higher support than C2: *Email* to communicate about subject matter. This is consistent with results from Table IV, where the students of the same age group would rather use C3: *Facebook* instead of C2: *Email* to communicate with classmates. It is also observed that in addition to C1: *Chat*, the options C4: *Face-to-Face* and C7: *Skype* have their relative preferences decreasing across age groups and in addition, C7: *Skype* is the least preferred by all groups.

3. With the Instructor

Considering Table VI, it can be seen that overall, and for each age group, the most favored channel of communication with the instructor, indicated in bold, is C2: *Email*, while the second one is C6: *Question center*. C7: *Skype* and C3: *Facebook* are the least popular for all age categories. Interestingly, certain channels of communication highly favored among students are used to communicate with the instructors to a much lesser extent, and this is the case especially for C3: *Facebook.* On the other hand, C2: *Email* is much more used for communication with the instructor. This is opposite to the student-to-student interaction preference observed in Tables IV and V.

TABLE VI
COMMUNICATION CHANNELS WITH INSTRUCTOR BY AGE GROUPS

Channels	Age groups				
	<20	20-24	24-30	30+	Total
C1: *Chat*	5.12%	3.52%	3.53%	1.69%	3.89%
C2: *Email*	**43.41%**	**48.00%**	**45.29%**	**40.68%**	**46.14%**
C3: *Facebook*	0.24%	0.23%	0.00%	0.00%	0.20%
C4: *Face-to-face*	6.59%	9.98%	5.29%	10.17%	8.52%
C5: *Phone*	2.20%	1.64%	0.00%	5.08%	1.74%
C6: *Question center*	27.07%	25.00%	25.88%	33.90%	26.02%
C7: *Skype*	0.00%	0.47%	0.00%	0.00%	0.27%
C8: *Other*	6.34%	5.40%	6.47%	3.39%	5.70%

E. Who Will Influence Students to Take Online Courses?

Table VII represents the average scores based on students' age group and who is thought to influence their choice to take online courses. The students were asked to rate their answers as follows: 1= strongly disagree to 5 = strongly agree, where 3 = neutral.

Across all age groups, students disagreeing with the statement that their parents or relatives had an influence on their decision to take online classes are observed by the influence scores under 3. The two younger age groups appear to agree with the statement that their friends influenced their decision to take online courses, even more so for the 20-24 year age group, as seen with influence scores above 3. This is also true of the influence of classmates. The other two age groups disagreed with the influence of parents, relatives, friends and classmates.

TABLE VII
INFLUENCE BY AGE GROUP

Influence:	Age groups				
	<20	20-24	24-30	30+	Total
Parents	2.3834	2.2937	2.0175	1.9302	2.2779
Relatives	2.3405	2.3509	1.9298	2.1395	2.2973
Friends	3.1963	3.3632	2.7018	2.7907	3.2265
Classmates	3.0307	3.1484	2.5088	2.4186	3.0221

F. What Do Students Think of Online Courses in General?

Students were asked their opinion about online courses in general by stating their agreement with a list of statements as follows: 1= strongly disagree to 5 = strongly agree, where 3 = neutral. Table VIII presents the average level of agreement with each statement according to age categories. When the average level of support for a statement is above 3, it is an indication that there is some agreement, and below 3, some disagreement.

TABLE VIII
STUDENTS' OPINION ABOUT ONLINE COURSES

Online courses are:	Age groups				
	<20	20-24	24-30	30+	Total
O1: *boring*	3.2915	3.0842	2.6083	2.6875	3.0754
O2: *easy to learn*	3.5674	3.6141	3.7583	3.5000	3.6114
O3: *easy to use*	**3.6050**	**3.6998**	**3.8167**	3.7083	**3.6860**
O4: *efficient in meeting*	3.2633	3.4288	3.5000	3.6250	3.3982
O5: *effective in meeting*	3.2727	3.4043	3.5250	3.4375	3.3816
O6: *enjoyable*	3.1473	3.3354	3.3333	3.4792	3.2886
O7: *fun*	3.0000	3.1394	3.1917	3.3542	3.1149
O8: *good idea*	3.4138	3.5972	3.7917	**3.8125**	3.5754
O9:*in general, beneficial*	3.3103	3.4778	3.5917	3.7292	3.4535
O10: *NOT a waste of*	3.3135	3.5942	3.7417	3.7292	3.5368
011: *NOT pleasant*	3.1066	2.9602	2.6667	2.8333	2.9649
O12: *useful*	3.4232	3.6217	3.8000	3.7083	3.5886

Based on Table VIII, as indicated in bold, the highest level of agreement for statements O3: *easy to use* for students in general, except for the older group of students who instead favoured O8: *good idea*. The statement with the next highest level of agreement for the younger group is O2: *easy to learn*, for the next two categories it is O12: *useful*, and for the 30+ group, it is equally O9: *beneficial* and O10: *not a waste of time*.

As age increases, more support for the statements O6, O7, O8 and O9, is observed, which shows that respondents think that online courses are *enjoyable, fun, good idea*, and *beneficial*. All groups, except the younger ones, disagree with the statement O11: *not pleasant*. Similarly, the older two groups disagree with the statement O1: *boring*. Overall,

students think positively about online courses.

IV. Conclusion

Students' perspectives do seem to be impacted by age profile as seen by the results of the study. Age was shown to have an impact on the reasons why students select online classes instead of in-class. Younger students, more than older students also are inclined to believe that online classes might be easier than in-class delivery and are more influenced by friends. This indeed makes sense, as younger students are more prone to friends or peer influence especially if the friends experienced negative learning experiences with a particular online course [26]. This category of student also perceived support of higher-order thinking skills and team-building skills differently from older students. This may be explained by the fact that younger and older students are at different stages of their career. All age groups indicated "Other reasons" for taking online courses, some of which might include commute time, work conflict or family responsibilities, as suggested by [27], which were not captured in this study. These reasons need to be explored further.

Consistent with other studies, younger students indicated a preference for using Facebook for communicating with peers over all other media [28]. Older students indicated "Other", possibly Twitter, as was the case for undergraduate students studying in Kuwait [29]. This also needs to be further studied.

It is left to be seen if these results hold true across other courses, graduate and undergraduate. By having a better handle on students' perspectives and profiles, online courses can be better tailored to meeting their needs, ensuring better success in this learning environment that is on the rise in educational institutions.

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