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Article

Cryptocurrency Awareness Among Students at A Premier Academic Institution In ISYS: The Razorbacks of Arkansas

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Abstract

The block chain in relation to cryptocurrencies has made this specific technology critical to the world's socio-economic future. Hence this possibly new global money seems quite relevant for Higher Education. The main objective of this research paper was to determine the relationship between block chain technology and cryptocurrencies as an independent variable and attitudes, opinions and adoption of University of Arkansas students at the Sam M. Walton College of Business as dependent variables. The survey's premise was that student body of the Sam M. Walton College of Business at the University of Arkansas was willing to embrace the idea of beneficial usage of block chain technology and more specifically, cryptocurrencies and expect this monetized technology to be a factor in their future career. The quantitative survey consisted of 29 questions and was conducted through computer assisted web-interviewing (CAWI method). Based on 429 completed surveys, the findings were both statistically significant and confident. If the University of Arkansas would introduce cryptocurrencies and block chain technology in a classroom setting, as well as in other areas of students' life, this innovation by Higher Education would be quite positively accepted by the student body at an academic institution globally-recognized in ISYS as The Razorbacks of Arkansas. The study recommends rolling out an Introductory Cryptocurrency course, even as an extension, or a Smart Contracts course to learn Solidity for Ethereum Smart Contracts, would seem appropriate for business schools.

Keywords

Cryptocurrencies, block chain, University of Arkansas, supply chain

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It is ironic that the preeminent retailer in the world, Walmart, in extending its supply chain/ block chain expertise, is now intentionally or otherwise entering the world of Digital Currencies or cryptocurrencies. Cryptocurrencies are where block chain and money meet or in the minds of many, they are the digitized assets that through speculation and possible criminality and fraud, is nothing more than Castles-in-the-Sky. But no matter the perception, it is University of Arkansas and Walmart's synergism that could create a new global money. Or perhaps this already happened in the form of home-grown Jed McCaleb, Co-Founder and Architect at the Stellar Development Foundation and recent guest speaker at the 2021 University of Arkansas' (U of A) Hackathon. Additionally, the Business School Dean, Matt Waller, is an alumnus of Penn State Smeal College of Business which ranked 1 in graduate supply chain education, and who himself is an expert in logistics. Bentonville-Fayetteville is the best place in all the Universe to ferret out what these geekish Razorbacks, these block chain leaders of tomorrow, think about the new global money.

But what is it about the block chain in relation to cryptocurrencies that makes this specific technology so critical to the world's socio-economic future? Decentralization in terms of a block chain is an equal distribution of a database around many participants that have a complete copy of this block chain. With cryptocurrencies we have a common, yet unique, database with the entire history of financial transfers, user account numbers and other information that is not stored on any single server but is located on millions of PC systems that are constantly synchronized with each other. Moreover, it is this block chain technology that confers much of the value in cryptocurrencies. After all, block chain usage in terms of cryptocurrencies is vastly superior to a regular database since block chain allows one to conduct database integrity checks, audit the entire transaction history on the fly, synchronize data and create backup copies in real-time and eliminate a single point of failure within the accounting system. Although the vast majority of cryptocurrencies are highly decentralized, but the most striking case "decentralized" coin would be the one with its system of gateways owned by the founders.

The University of Arkansas (U of A) is the veritable Carmarthen academic institution in the world when it comes to Information Systems, Logistics and the Block chain. Its business students believe about cryptocurrencies should be taught in this extension of ISYS/Block chain systems and that this possibly new global money seems quite relevant for Higher Education throughout the planet Earth. The Information Systems department (hereinafter ISYS) at the Sam M. Walton College of Business (hereinafter WCOB) is arguably ranked 1st in the world for research productivity in top journals and has been consistently recognized among the top 5 Information Systems departments. Given its academic prowess in relation to the logistical supply chain, Northwest Arkansas as the hub of Walmart, J.B. Hunt and Tyson Foods, the basis for this specific locality for this survey seems almost self-evident.

Therefore, the main objective of this research paper was to determine the relationship between block chain technology and cryptocurrencies as an independent variable and attitudes, opinions and adoption of University of Arkansas students at the Sam M. Walton College of Business as dependent variables. The starting hypothesis was that student body of the Sam M. Walton College of Business at the University of Arkansas was willing to embrace the idea of beneficial usage of block chain technology and more specifically, cryptocurrencies at their University, in their everyday life and expect this monetized technology to be a factor in their future career and would like to see further practical and academic adoption of this technology wherever they study. The research should prove whether the starting hypothesis is true or false.

Research Methodology

Research design

Descriptive quantitative method was chosen as the research method. The researcher was interested to see associations between variables and an objective stance. The starting principles for choosing a research method were:

- The results should be based on large enough sample size that is representative of the population of students of Sam M. Walton College of Business.
- The research study should be able to be replicated or repeated for the purpose of trend tracking or independent audit.
- The researcher should set clearly defined research questions to which objective answers are sought.
- The research paper may be used in the future to generalize concepts more widely, predict future results, or investigate causal relationships.

Sample

The objective was to have minimum of 364 students completing the survey which would provide the results with a 95% confidence level and a 5% margin of error for the total population of 6,644 students enrolled at the Sam M. Walton College of Business. The sample size attained was 439 students that completed the survey. Based on the year of the studies, the sample consisted of 204 Freshman students, 52 Sophomore, 81 Junior, 72 Senior and 30 Graduate students that competed the survey.

Research Instrument and procedure:

The quantitative instrument chosen was quantitative survey through computer assisted web interviewing (CAWI method). The survey was made up of 29 questions to be rated using a 7-point Likert response scale, 7 dichotomous questions and three multiple-choice questions. The quiz was made of 8 multiple-choice questions in the last section of the survey. The survey was conducted in the period from January 3rd through February 8th of 2021. The full questionnaire received IRB approval. The questions were presented through graphs' titles. The researcher used reverse-coding in questions: Q9 and Q16.

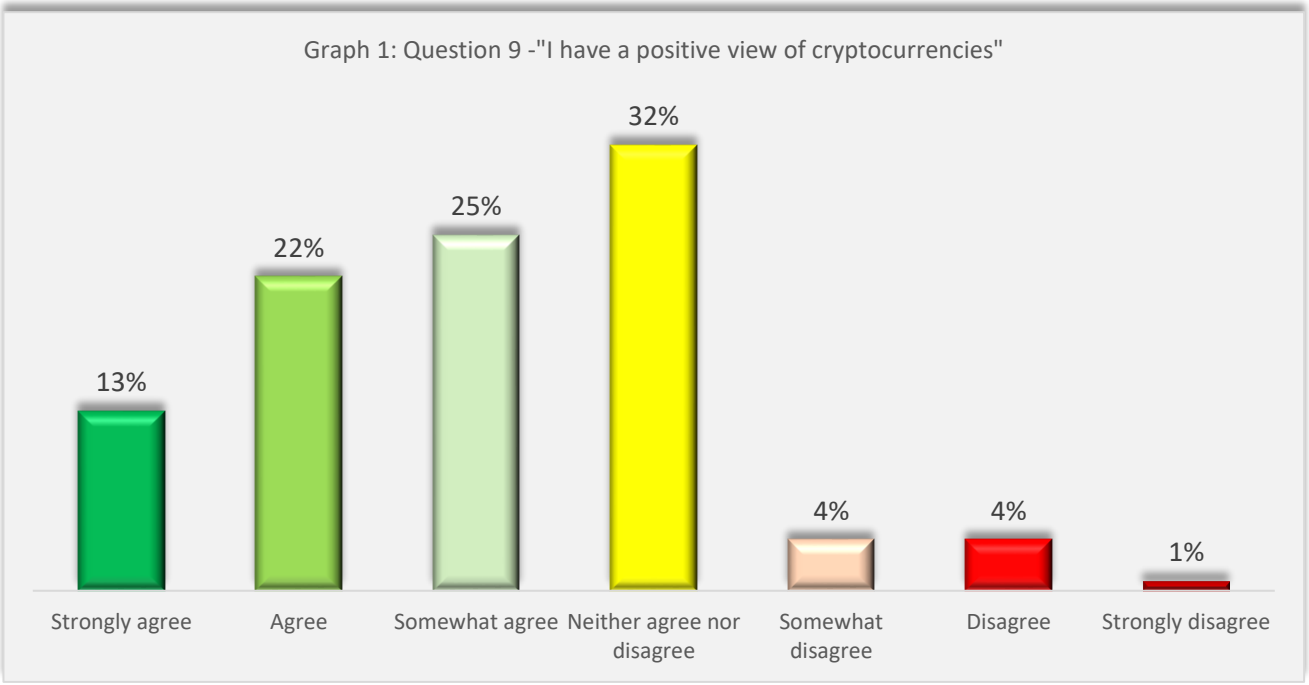
Data analysis

The researcher used Qualtrics online surveys tool to collect the data and MS Excel 2016 to analyze the data. The analysis was based on Descriptive analysis, using percentage, frequency and mean. In order to provide statistically relevant results, the following was done:

- The uncompleted surveys were erased and thus excluded from analysis.
- The answers were checked for consistency by logical control of answers on questions covering similar topics.

Results and Discussion

It was revealed that a general opinion about cryptocurrencies among University of Arkansas students is positive (60%) although the category most chosen was that of undecided (Graph 1) were predictably, most undecided, suggesting that as Freshman go through their studies they tend to become more familiar with the topic and formed more coherent and positive view of cryptocurrencies. Despite the media barrage that cryptocurrencies were generally used for criminal activity, only 9% of those surveyed held a clearly negative view of them.

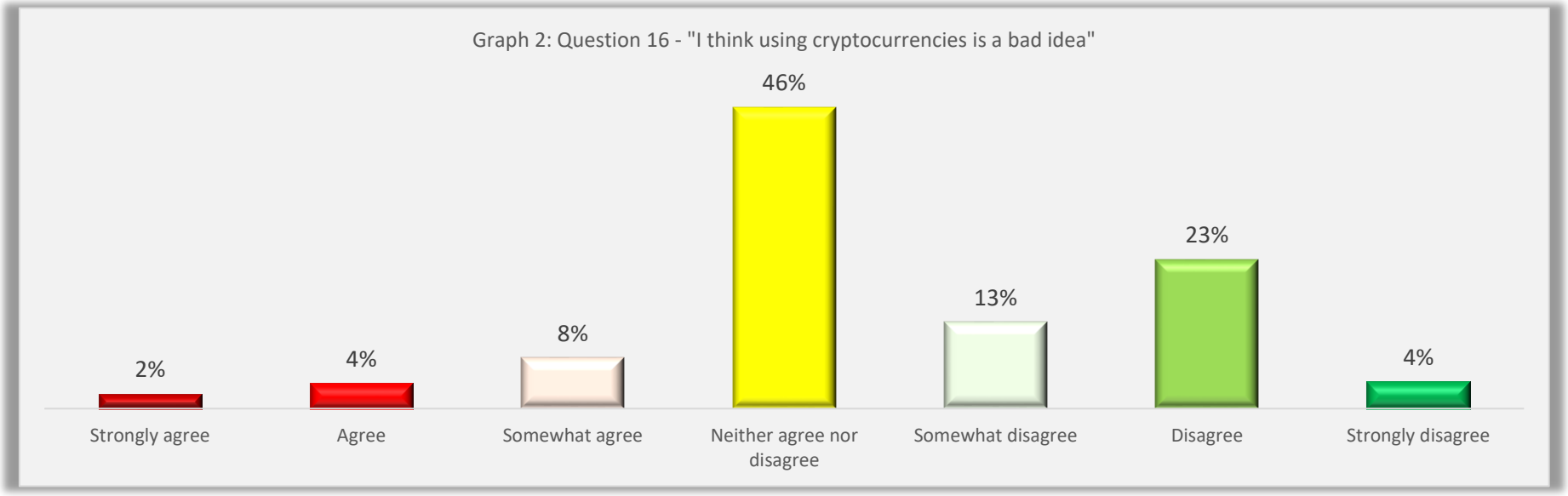


Q9 I have a positive view of cryptocurrency.

	Total sample	*What academic year of college are you in?*												*Are you taking at least one blockchain course outside of your regular studies at the Walton*			
		Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*			
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
Strongly agree (7)	56	12.76%	12	5.88%	11	21.15%	14	17.28%	17	23.61%	2	6.67%	12	30.00%	44	11.11%	
Agree (6)	98	22.32%	46	22.55%	7	13.46%	15	18.52%	23	31.94%	7	23.33%	12	30.00%	85	21.46%	
Somewhat agree (5)	111	25.28%	49	24.02%	15	28.85%	26	32.10%	14	19.44%	7	23.33%	7	17.50%	104	26.26%	
Neither agree nor disagree (4)	139	31.66%	79	38.73%	16	30.77%	23	28.40%	14	19.44%	7	23.33%	7	17.50%	130	32.83%	
Somewhat disagree (3)	16	3.64%	10	4.90%	0	0.00%	2	2.47%	1	1.39%	3	10.00%	2	5.00%	14	3.54%	
Disagree (2)	16	3.64%	6	2.94%	2	3.85%	1	1.23%	3	4.17%	4	13.33%	0	0.00%	16	4.04%	
Strongly disagree (1)	3	0.68%	2	0.98%	1	1.92%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	3	0.76%	
Count, N	439		204		52		81		72		30		40		396		
Mean, x̄	4.95216401		4.73039216		5.05769231		5.16049383		5.44444444		4.53333333		5.625		4.88636364		

Notably, only 44% disagreed that, “Using cryptocurrencies is a bad idea,” even though 60% earlier indicated having positive view of cryptocurrencies (Graph 2). This could imply that the strength of positivity was not so firm and would be in conformity with the survey since 25% only Somewhat Agreed in their positive view of cryptocurrencies. Over the next four years of institutional learning at the undergraduate level, this wobbly demographic could easily be tilted more starkly towards pros or cons.

In this vein, 58% of Freshman were undecided (12% more than average), while Seniors (62%) and students with at least one block chain course taken outside WCOB (63%) most believed cryptocurrencies were not a bad idea (and also held a positive view of them). This finding suggest to suspect a strong crossover between these two groups (62% and 63%)).

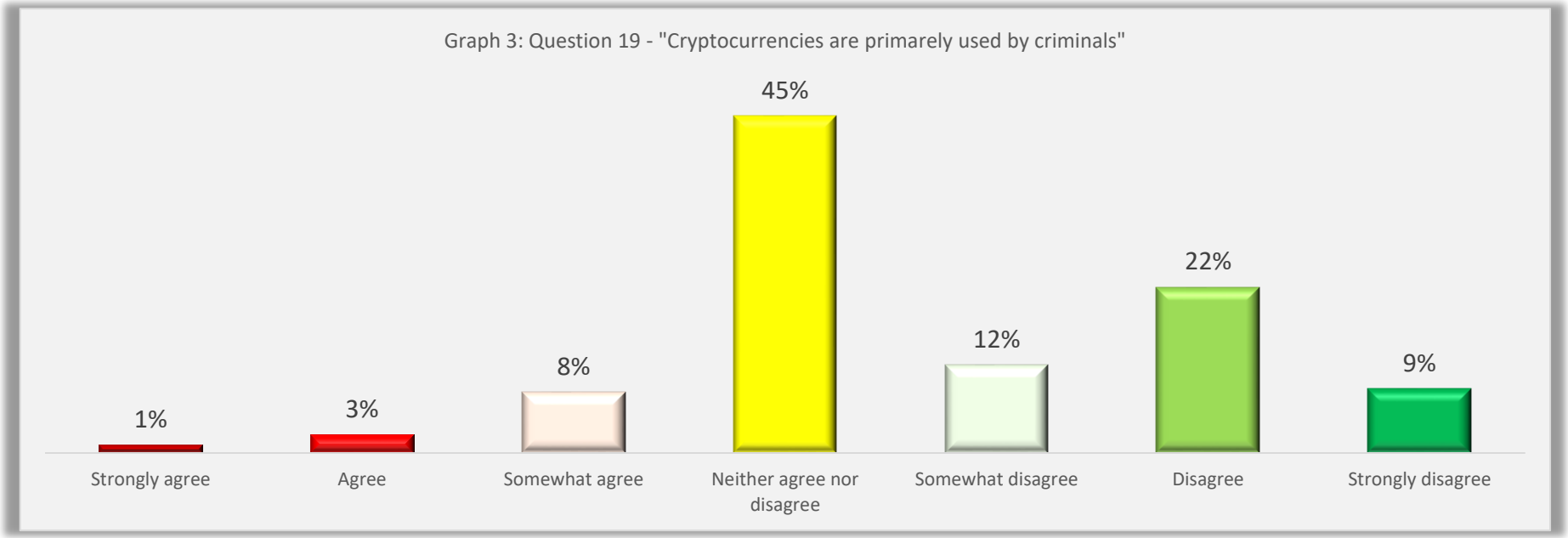


Q16 I think using cryptocurrencies is a bad idea.

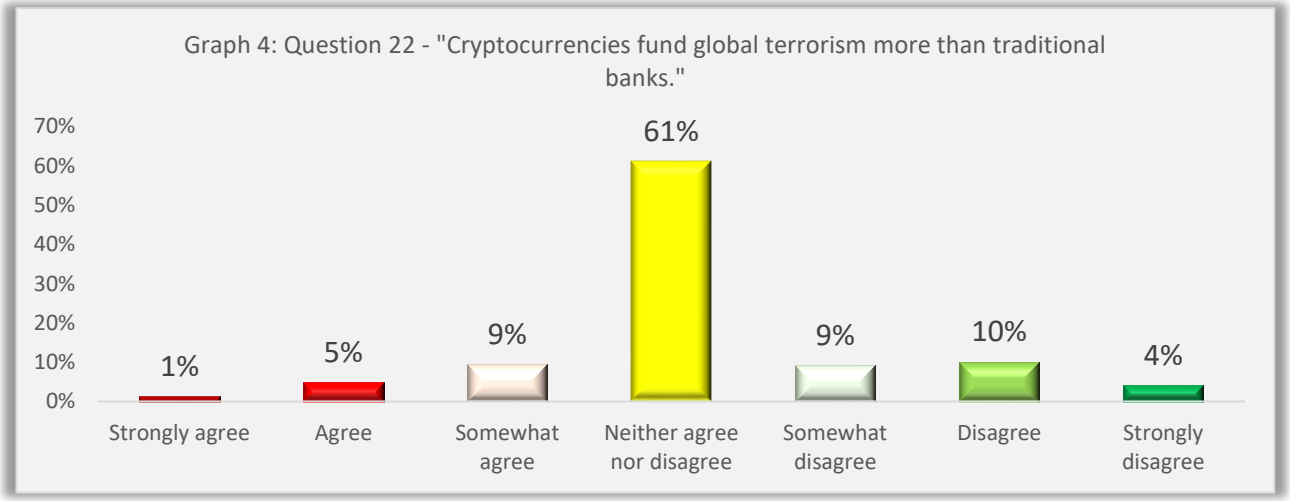
	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	10	2.28%	5	2.45%	2	3.85%	0	0.00%	1	1.39%	2	6.67%	3	7.50%	7	1.77%
Agree (6)	17	3.87%	7	3.43%	2	3.85%	3	3.70%	5	6.94%	0	0.00%	2	5.00%	15	3.79%
Somewhat agree (5)	34	7.74%	16	7.84%	6	11.54%	5	6.17%	3	4.17%	4	13.33%	3	7.50%	31	7.83%
Neither agree nor disagree (4)	202	46.01%	119	58.33%	21	40.38%	33	40.74%	19	26.39%	10	33.33%	10	25.00%	189	47.73%
Somewhat disagree (3)	58	13.21%	23	11.27%	6	11.54%	12	14.81%	12	16.67%	5	16.67%	5	12.50%	53	13.38%
Disagree (2)	100	22.78%	33	16.18%	11	21.15%	24	29.63%	25	34.72%	7	23.33%	15	37.50%	85	21.46%
Strongly disagree (1)	18	4.10%	1	0.49%	4	7.69%	4	4.94%	7	9.72%	2	6.67%	2	5.00%	16	4.04%
Count, N	439		204		52		81		72		30		40		396	
Mean, x̄	3.51252847		3.76960784		3.53846154		3.24691358		3.06944444		3.5		3.375		3.52272727	

Not surprisingly, the percentages across the board were highly correlated as to those who thought cryptocurrencies were a bad idea with those who believed cryptocurrencies were primarily used by criminals and/or fund global terrorism (Graph 3). One can suppose that those who do not like cryptocurrencies believe they are primarily used by criminals, or terrorists who fund global terrorism. But even here, most students were simply undecided on this issue, and when decided, most disagreed with this position to nearly the same degree across the board (23%, 22% and 10%).

Notably, Seniors (59%) mostly disagreed across the board on this issue, and even more so the students (63%) with at least one course in block chain outside WCOB.



Most students (61%), even more so than with other questions, were simply undecided when it comes to ascertaining whether or not cryptocurrencies fund global terrorism more than traditional banks (Graph 4). Surprisingly, Graduate Students (40%) who through the survey overall had the most decidedly negative view of cryptocurrencies, most decidedly did not believe cryptocurrencies funded global terrorism more than traditional banks. Perhaps, Seniors are old enough to better remember the Great Financial Crisis and dislike traditional banks more than they are apparently leery of cryptocurrencies.

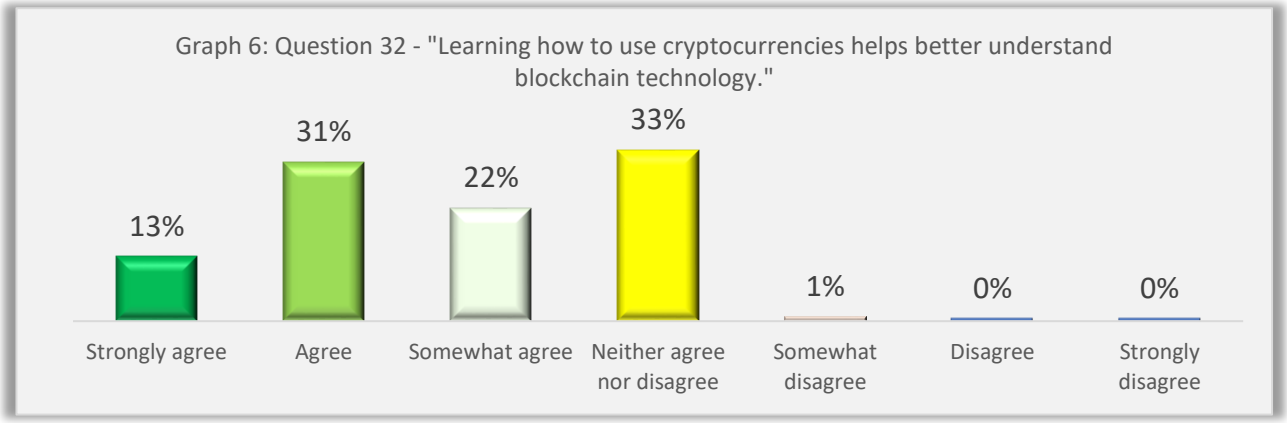


Potential for adoption of Crypto

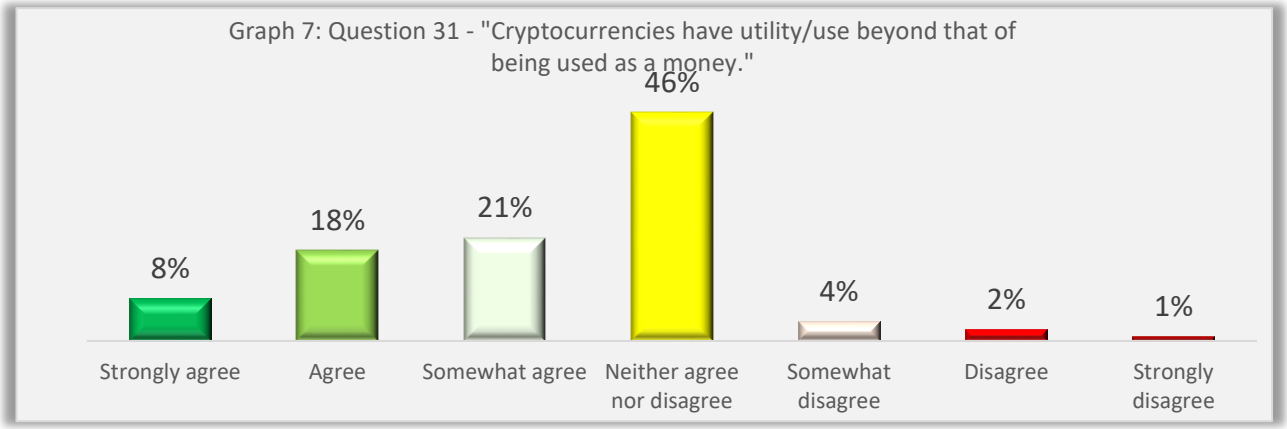
The survey clearly conveys a positive leaning towards cryptocurrencies that rises when even one course is taken in block chain. The potential for teaching cryptocurrencies is clearly indicated, as is the ability to form one way or another, a more definitive view of block chain application as to cryptocurrencies. Any present barriers to adoption could easily be surmounted by making student-usage in class assignments more applicably across the entire academic spectrum with the Walton College of Business and not just the IS Department, or specific Block chain/Cryptocurrency Classes (Graph 5).

The students stated that the most significant barriers were related to lack of information of usage (62%), lack of technical expertise (59%) and in general difficulty of using cryptocurrencies (52%). A negative component of using cryptocurrencies as a barrier did not appear until Fourth Place, which involved the fear of getting hacked or defrauded. This is nearly always the case when adopting a financial innovation (checks, ATMS, etc…), but can be largely mitigated through learning proper usage, especially from the #1 Block chain/Logistics Undergraduate Academic Institution in the United States.

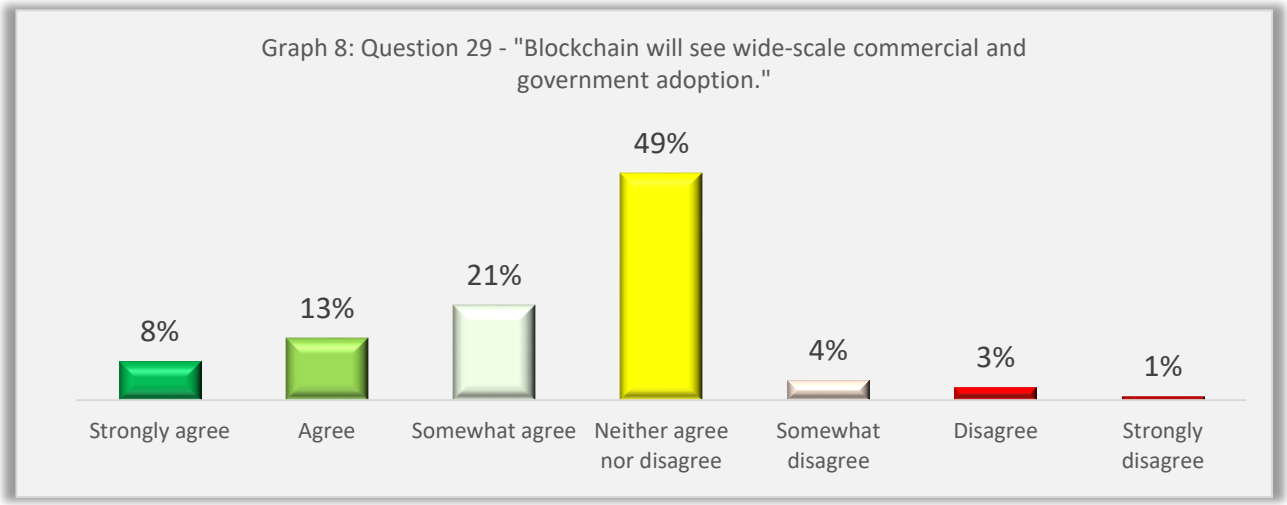
Most significantly, 66% of participating students agreed at some level that education would certainly help block chain adoption (block chain as the base/ground for cryptocurrencies development and usage) (Graph 6). Again, the Senior students (80%) were above average in agreement on this point.



Half of the respondents agreed that cryptocurrencies have a use beyond that of being used solely as a money (Graph 7). The students (76%) that took at least one course on Block chain topic indicated that the course/s they took provided them with necessary knowledge to better ascertain present and future potential of cryptocurrencies.



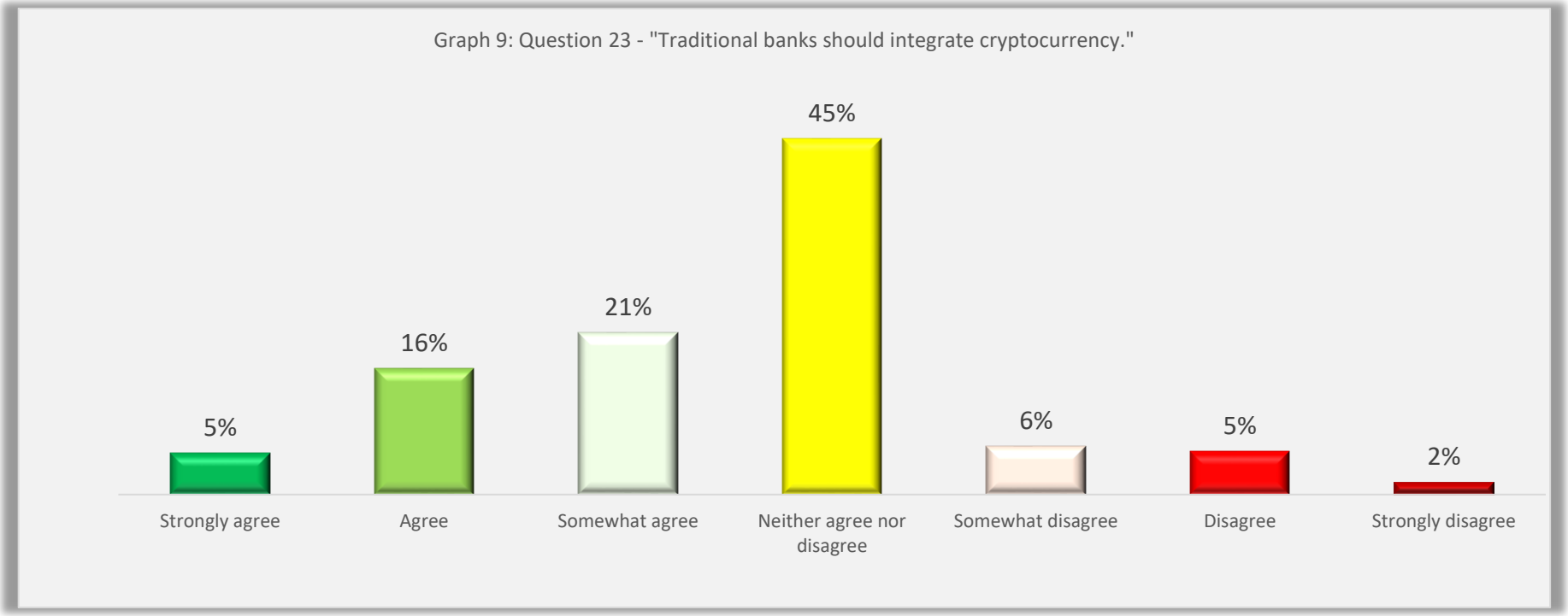
Although most were skeptical or undecided that block chain will succeed and see a wide-scale commercial use; however, those more in the know clearly believed otherwise (68% amongst Seniors and 61% amongst students that took at least one block chain course outside of WCOB) (Graph 8).



Q29 Blockchain will see wide-scale commercial and government adoption.

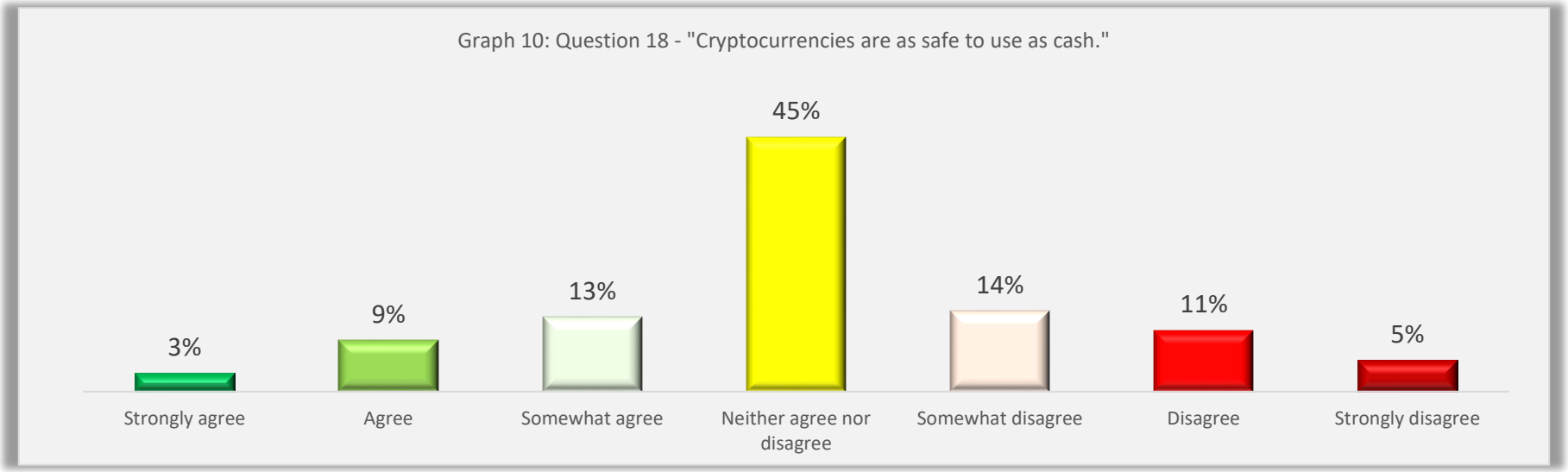
	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	37	8.43%	4	1.96%	5	9.62%	10	12.35%	15	20.83%	3	10.00%	11	27.50%	26	6.57%
Agree (6)	59	13.44%	13	6.37%	9	17.31%	9	11.11%	21	29.17%	7	23.33%	8	20.00%	50	12.63%
Somewhat agree (5)	91	20.73%	41	20.10%	10	19.23%	20	24.69%	13	18.06%	7	23.33%	5	12.50%	86	21.72%
Neither agree nor disagree (4)	217	49.43%	131	64.22%	26	50.00%	38	46.91%	16	22.22%	6	20.00%	16	40.00%	199	50.25%
Somewhat disagree (3)	19	4.33%	8	3.92%	0	0.00%	3	3.70%	4	5.56%	4	13.33%	0	0.00%	19	4.80%
Disagree (2)	12	2.73%	5	2.45%	2	3.85%	0	0.00%	3	4.17%	2	6.67%	0	0.00%	12	3.03%
Strongly disagree (1)	4	0.91%	2	0.98%	0	0.00%	1	1.23%	0	0.00%	1	3.33%	0	0.00%	4	1.01%
Count, N	439		204		52		81		72		30		40		396	
Mean, x̄	4.60364465		4.26960784		4.75		4.7654321		5.25		4.63333333		5.35		4.52777778	

While a significant portion of participating students (42%) believed traditional banks should integrate cryptocurrencies,13% disagreed due to possible fraud and security issues and 45% were undecided (Graph 9). So it seems traditional banks should proceed, but with caution and clearly market their efforts in precluding cryptocurrency usage in the furtherance of crime or fraud.



Crypto Safety

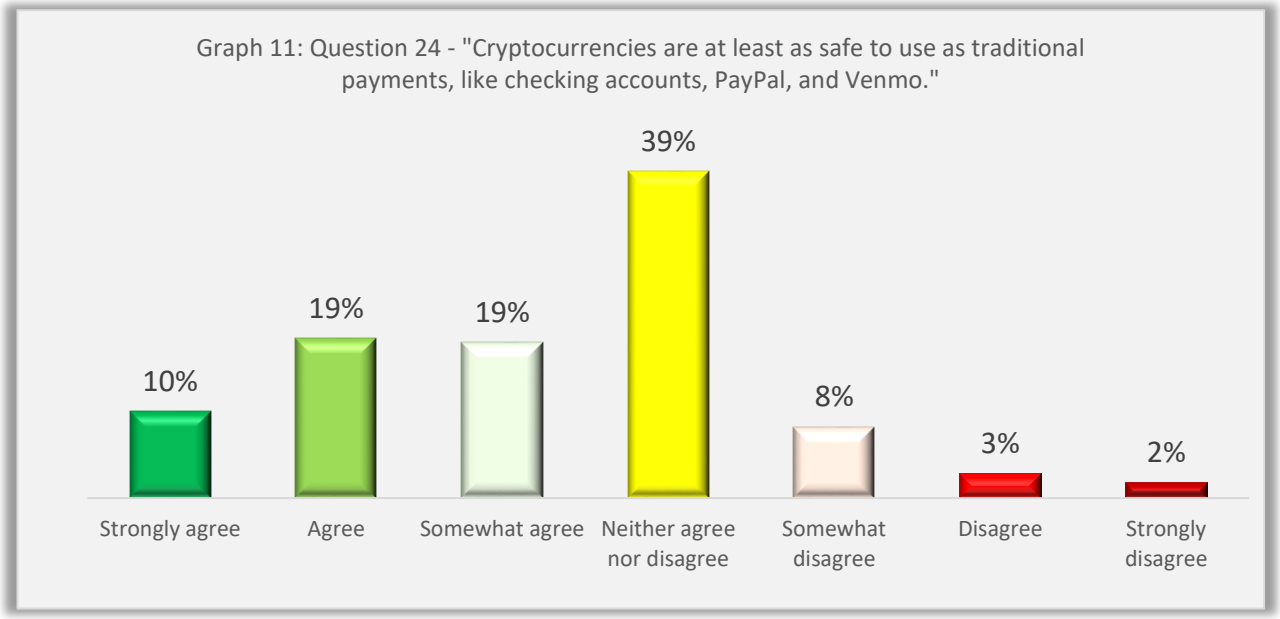
As with cryptocurrencies, cash is also a means of payment with a worldwide scope, and cash is private and anonymous enough to serve as a means of payment for black markets and any other outlawed economic activity. But the respondents (33%) believed more strongly that cash is safer than cryptocurrencies (Graph 10). Perhaps because they perceive cryptocurrencies to be more volatile, and more of a speculative asset, while cash is just a means of payment and generally not an investment, particularly not a speculative one. While only 25% of respondents believed cryptocurrencies were as safe as cash, a few seniors (43%) and students that took at least one block chain course outside of Sam Walton Business College clearly tended to see cryptocurrencies as a cash equivalent.



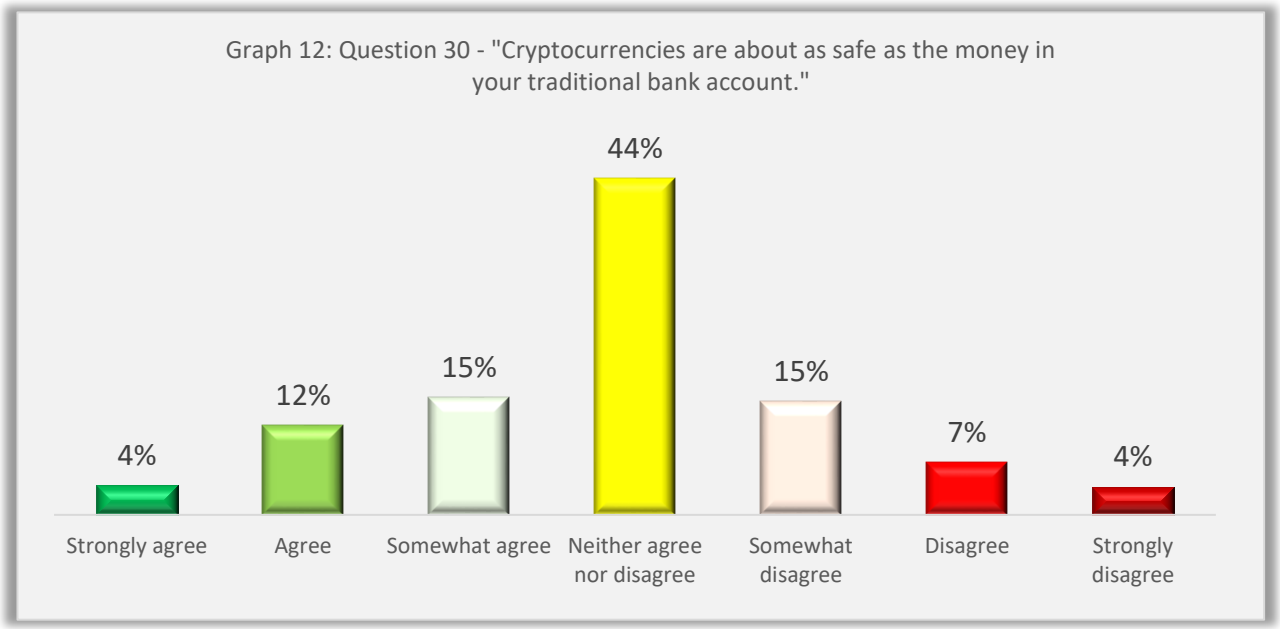
Q18 Cryptocurrencies are as safe to use as cash.

	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	14	3.19%	3	1.47%	5	9.62%	1	1.23%	5	6.94%		0.00%	7	17.50%	7	1.77%
Agree (6)	39	8.88%	14	6.86%	3	5.77%	8	9.88%	12	16.67%	2	6.67%	2	5.00%	37	9.34%
Somewhat agree (5)	57	12.98%	20	9.80%	4	7.69%	14	17.28%	14	19.44%	5	16.67%	9	22.50%	48	12.12%
Neither agree nor disagree (4)	195	44.42%	108	52.94%	24	46.15%	33	40.74%	21	29.17%	9	30.00%	11	27.50%	181	45.71%
Somewhat disagree (3)	62	14.12%	24	11.76%	6	11.54%	13	16.05%	11	15.28%	8	26.67%	5	12.50%	57	14.39%
Disagree (2)	47	10.71%	20	9.80%	7	13.46%	10	12.35%	6	8.33%	4	13.33%	4	10.00%	43	10.86%
Strongly disagree (1)	24	5.47%	14	6.86%	3	5.77%	2	2.47%	3	4.17%	2	6.67%	2	5.00%	22	5.56%
Count, N	438		203		52		81		72		30		40		395	
Mean, $\bar{x}$	3.88356164		3.75862069		3.92307692		3.92592593		4.29166667		3.56666667		4.375		3.83291139	

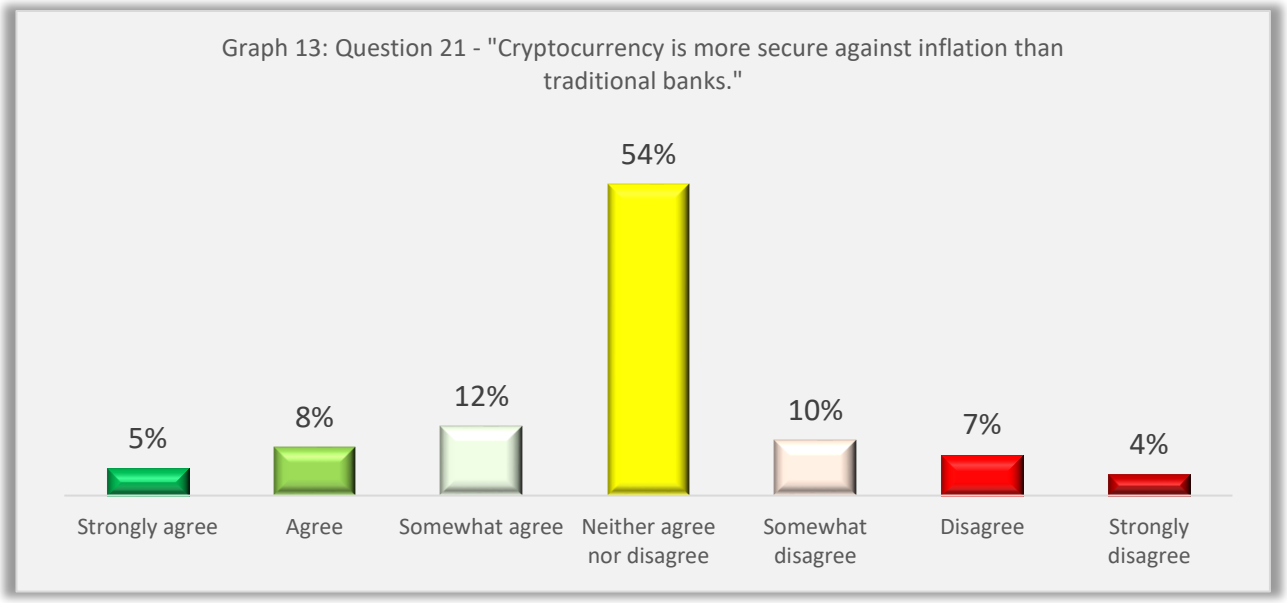
As to whether or not cryptocurrencies are as safe to use as traditional means of payment, those in agreement rose from Freshman (31%) to Seniors (60%) (Graph 11). Quite interestingly, those that took at least one course of block chain had a higher level of indecision (48%) than the average (45%).



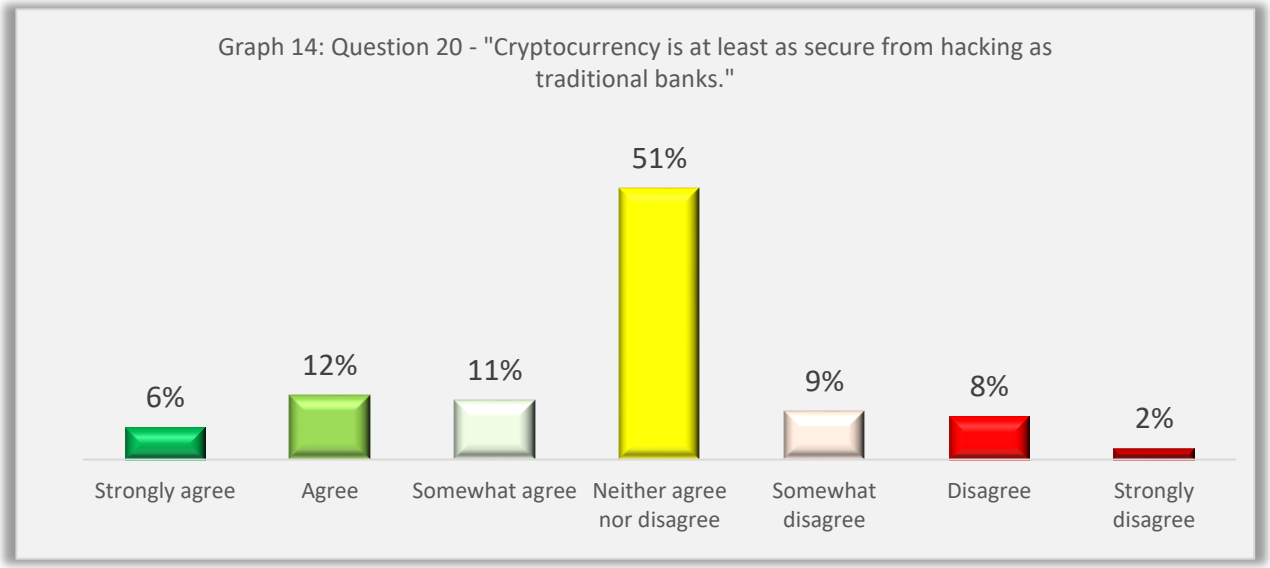
When asked whether cryptocurrencies are as safe as a traditional bank account, students agreed (31%) more than they disagreed (26%) (Graph 12). The results were the same whether Freshman, Sophomores, or Juniors, but yet again, the Seniors (51%) clearly differentiated themselves.



The next query was somewhat of a tricky question since although cryptocurrencies were created as an anti-inflationary hedge against the money-making capability of the Central Banks, their volatility as a speculative asset has been inflationary, making the "correct" answer by thoughtful students to be ambiguous, and that was the result! (Graph 13). Here, even Seniors could not agree or in any way differentiate themselves from the respondents at-large. However, students (45%) that took at least one block chain course outside of WCOB agreed that cryptocurrencies were more secure against inflation than traditional banks. Perhaps, because they studied the history of the origination of cryptocurrencies. Certainly, in countries where the monetary system has been historically inflationary such as Argentina or unpredictable, cryptocurrency usage has been more likely.

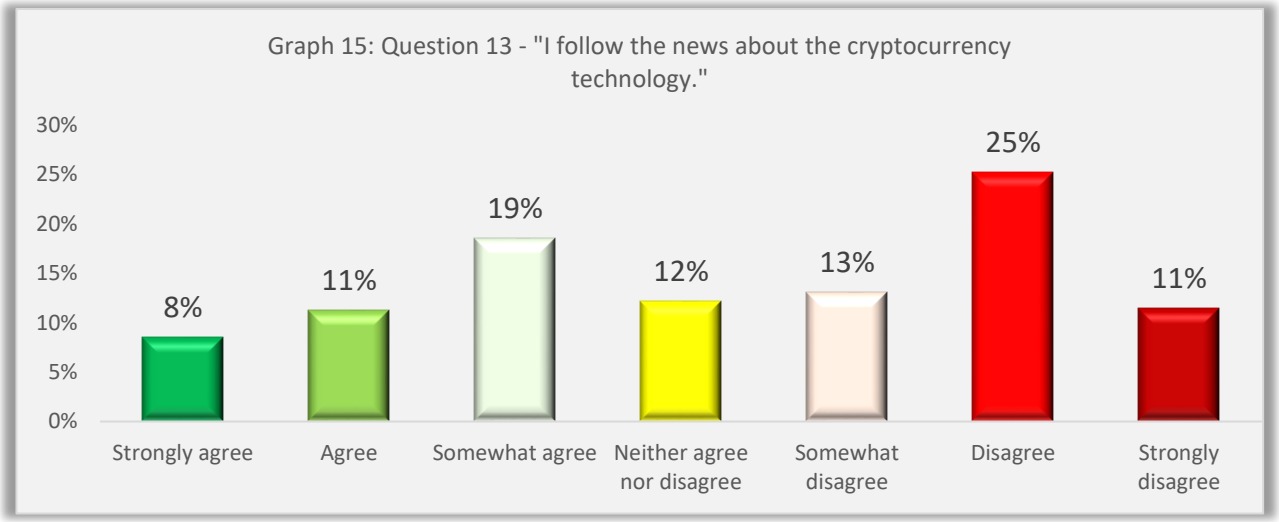


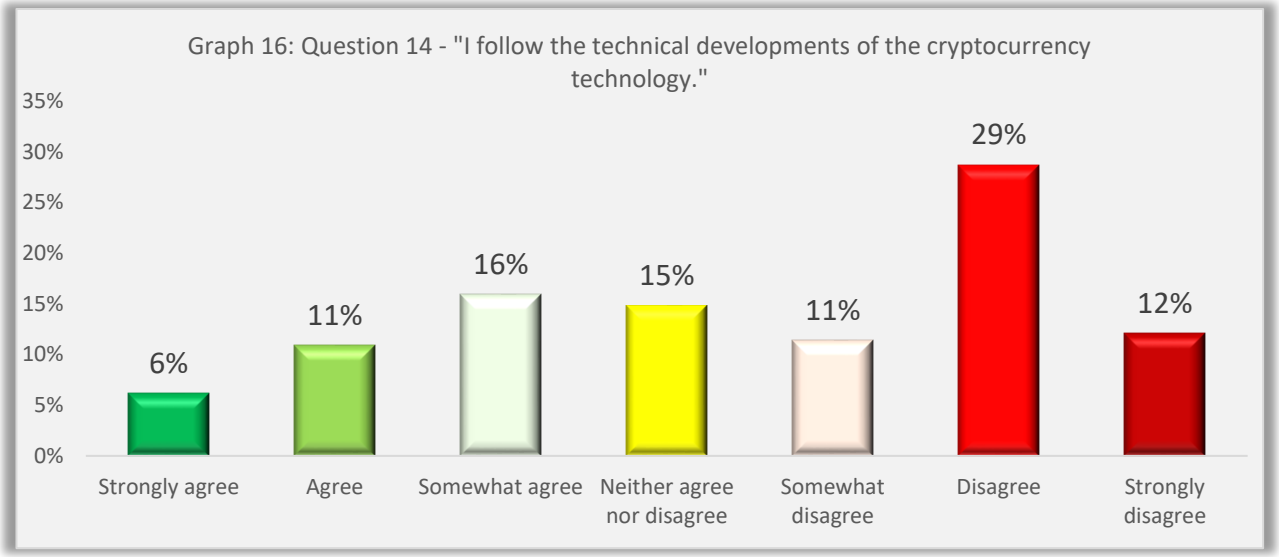
Overall, the Respondents indicated indecision as to whether or not cryptocurrencies are more secure from hacking than traditional banks (Graph 14). Yet admittedly, slightly more students agreed that cryptocurrencies are more secure from hacking than traditional banks (29% vs 19%). When banks are hacked (this author has had his bank account hacked twice) the hack remains private, but whenever cryptocurrencies are hacked it goes viral in seconds. Hence, one might have surmised that cryptocurrencies would have been perceived as less safe, but the leaning of the survey is exactly in the opposite direction.



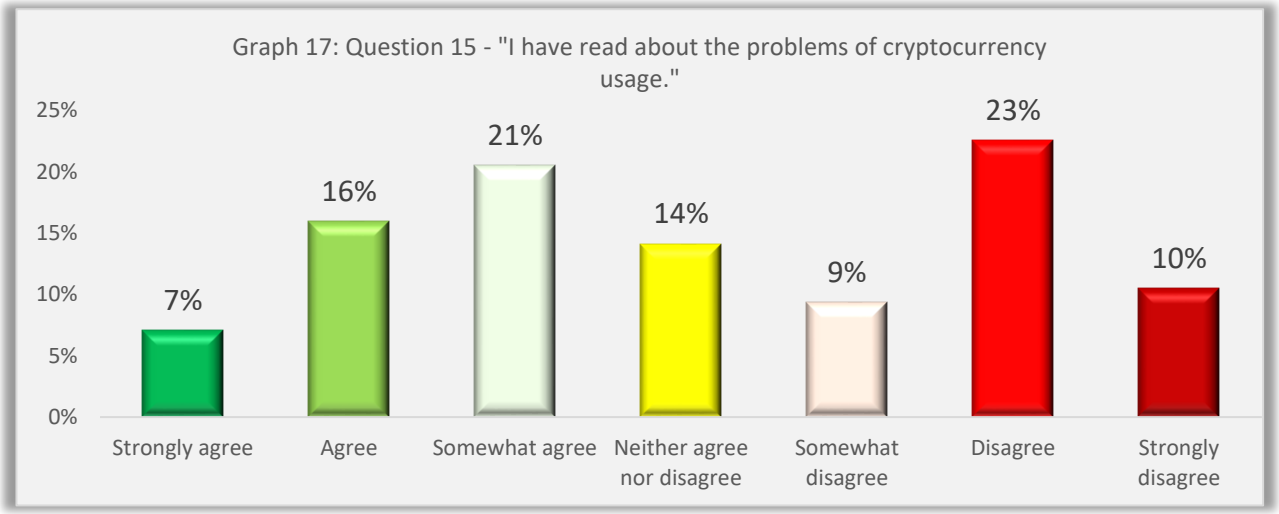
Students' crypto behavior

Roughly one-third of U of A students are already familiar enough with cryptocurrencies to begin using them for purchases. They follow the news about the cryptocurrency industry and discuss it with their friends (Graph 15). They not only intend to use cryptocurrencies for purchase but also express a clear desire to do so right away. On the other hand, half of the respondents did not indicate a specific interest for cryptocurrencies and its development (Graphs 15 and 16). Since the technology behind cryptocurrencies may require certain IT or programming knowledge, this rather high disinterest did not reflect the real potential for the future cryptocurrency usage. Those students that took at least one block chain course outside Sam Walton College of Business indicated a staggering 70% ongoing interest as to cryptocurrencies (Graph 16).

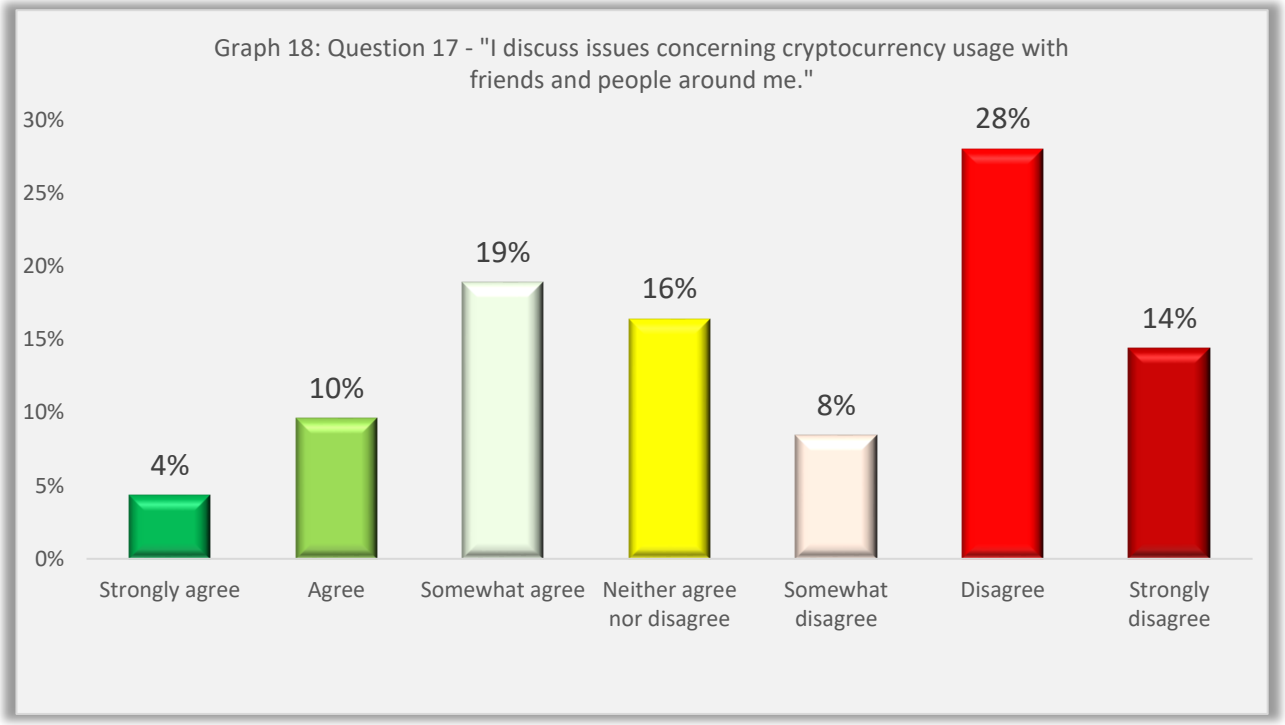




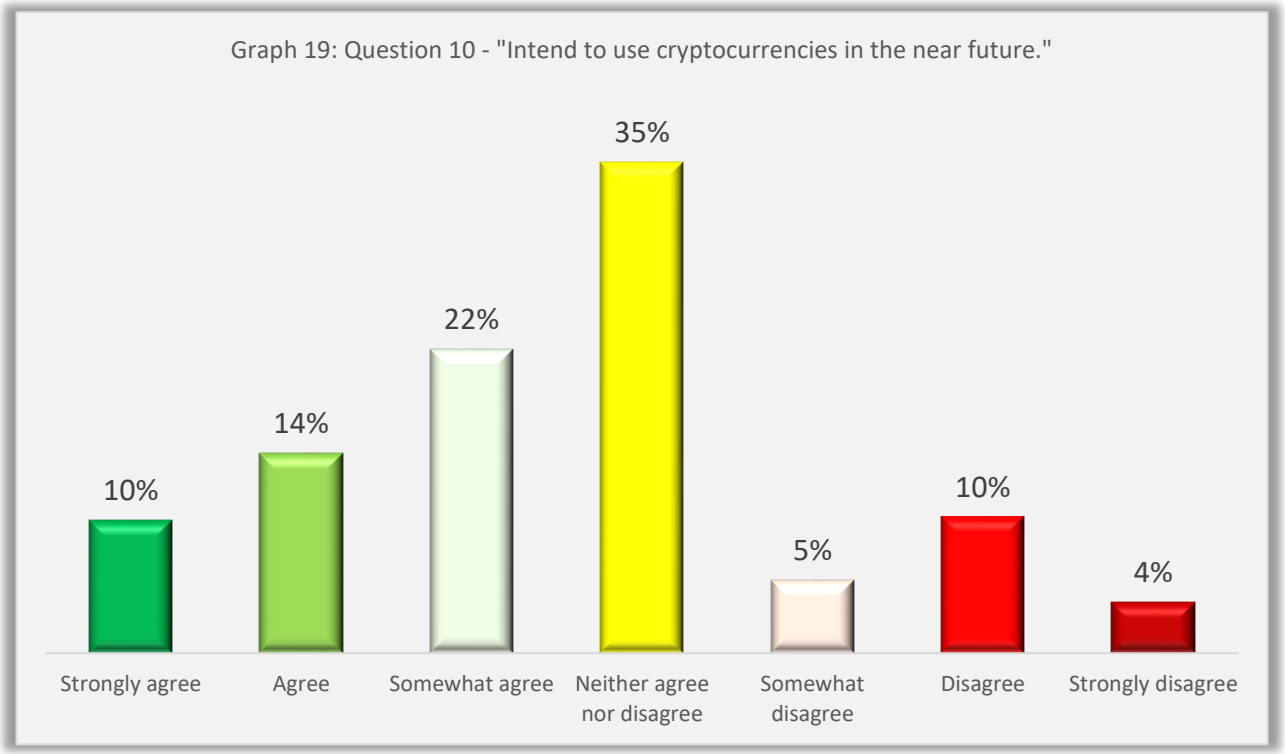
When it comes to reading about the problems of cryptocurrencies one must keep in mind that problems are covered in more detail than the news about technology itself, which calls for a more diminished audience (Graph 17).



Only one-third of respondents discuss cryptocurrencies with their friends, while Seniors (51%) and those students (61%) that finished at least one block chain course outside WCOB does discuss cryptocurrencies with their friends (Graph 18).

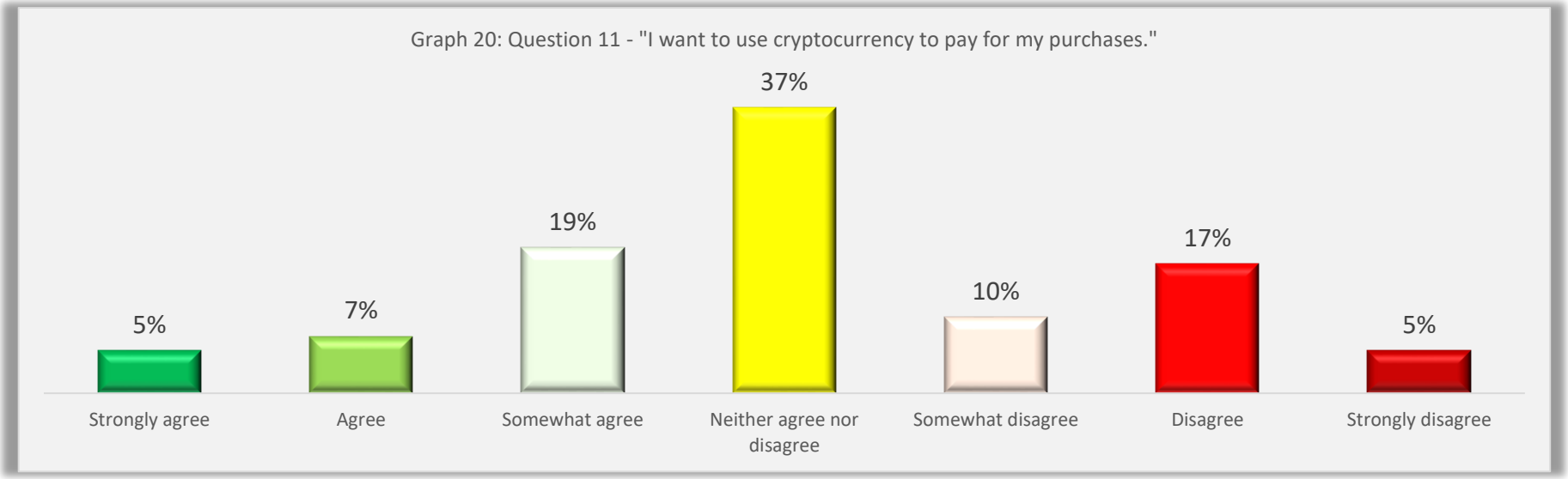


There is a clear indication by the Respondents to use cryptocurrencies in the near future usage, spiking to 69% with students more familiar with the block chain technology (Graph 19). But intention does not indicate activity since students wanting to use cryptocurrencies for purchases drops to 31% from 46% when expressed as an intention (Graph 20).



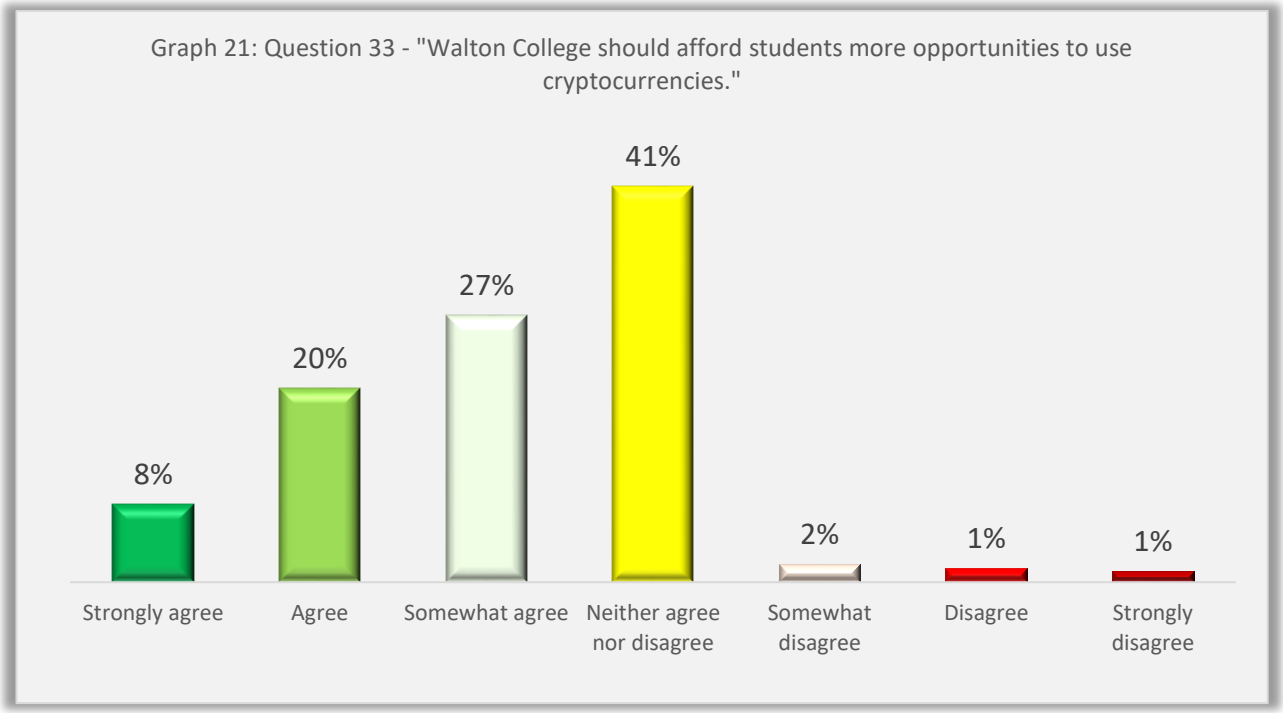
Q10 Intend to use cryptocurrencies in the near future

	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	42	9.57%	8	3.92%	9	17.31%	10	12.35%	12	16.67%	3	10.00%	11	27.50%	31	7.83%
Agree (6)	63	14.35%	29	14.22%	6	11.54%	9	11.11%	15	20.83%	4	13.33%	8	20.00%	55	13.89%
Somewhat agree (5)	96	21.87%	46	22.55%	11	21.15%	17	20.99%	16	22.22%	6	20.00%	6	15.00%	89	22.47%
Neither agree nor disagree (4)	155	35.31%	84	41.18%	16	30.77%	26	32.10%	21	29.17%	8	26.67%	10	25.00%	144	36.36%
Somewhat disagree (3)	23	5.24%	13	6.37%	3	5.77%	6	7.41%		0.00%	1	3.33%	0	0.00%	23	5.81%
Disagree (2)	43	9.79%	19	9.31%	6	11.54%	11	13.58%	4	5.56%	3	10.00%	4	10.00%	38	9.60%
Strongly disagree (1)	16	3.64%	5	2.45%	1	1.92%	2	2.47%	3	4.17%	5	16.67%	0	0.00%	16	4.04%
Count, N	438		204		52		81		71		30		39		396	
Mean, x̄	4.43607306		4.30392157		4.61538462		4.38271605		4.91549296		4.03333333		5.20512821		4.36616162	

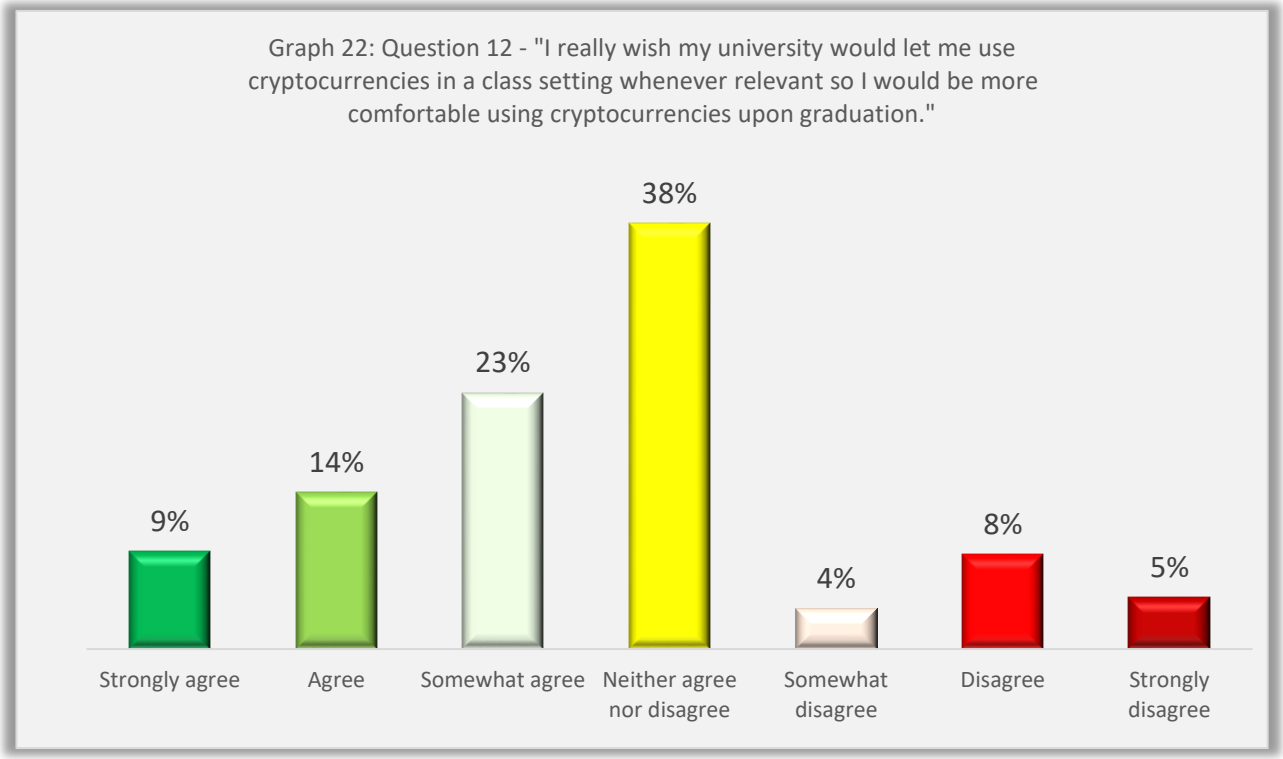


University Related Matters

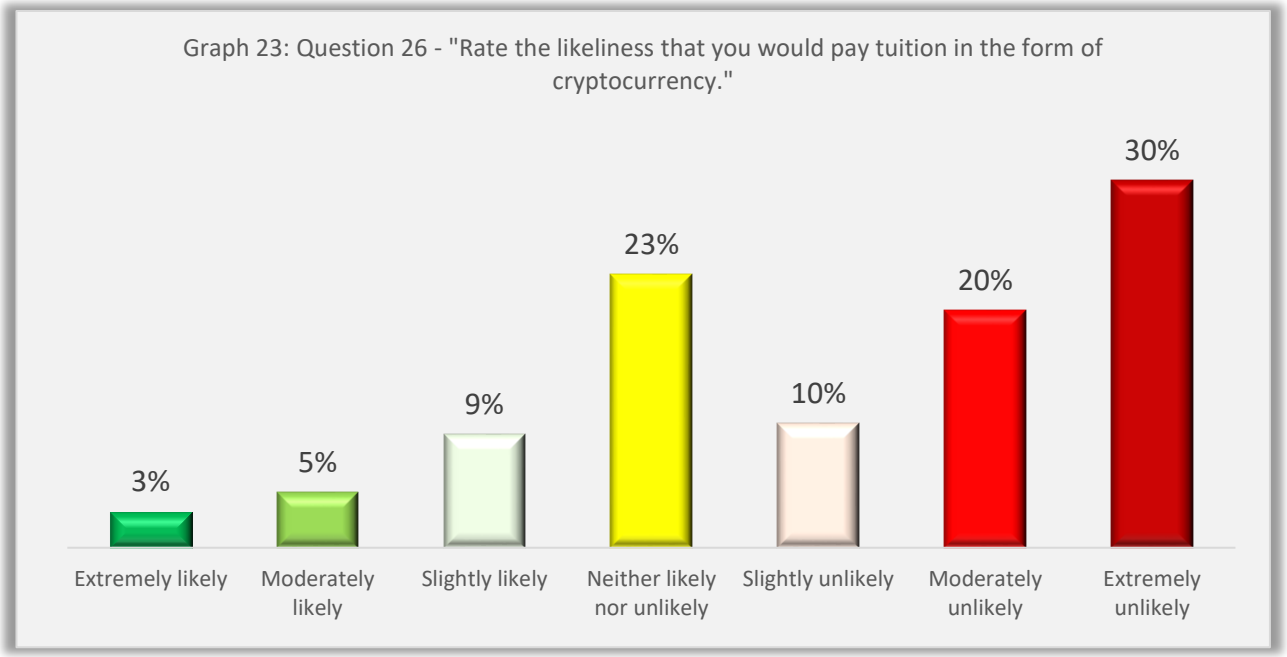
It seems a significant portion of the business students in the WCOB at the University of Arkansas expects and/or hope to learn more about cryptocurrencies from usage as well as from academic instruction. While many younger students are undecided on the future value of cryptocurrencies, more senior students and those with an Information System inclination are clearly desirous of learning more about cryptocurrencies as soon as practicable. Just over one-half of the respondents agreed that WCOB should afford students more opportunities to use cryptocurrencies, and only 4% were against this (Graph 21). It seems a reasonable expectation that with more practical education as to cryptocurrencies, the percentage of undecided will decrease in favor of those that agree with the statement. Seniors (79%) are the group that would like to get more opportunities the most, while the Freshman (59%) continue to be the group with the highest percentage of undecided.



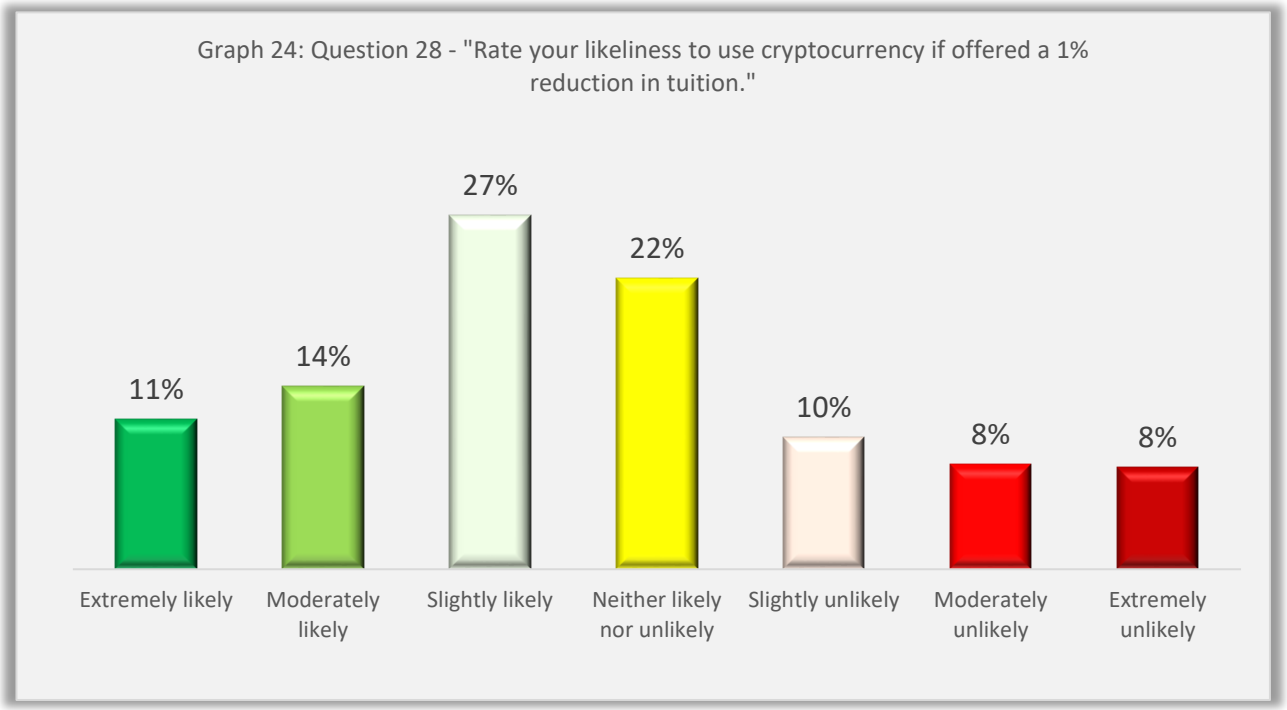
A lesser percentage agreed with the introduction of cryptocurrencies in a class setting "whenever relevant" (46% versus 55% on the previous question) (Graph 22). This perhaps implies that students would like to have more opportunities but want a more step-by-step introduction instead of an unstructured approach that might be too overwhelming if overdone.



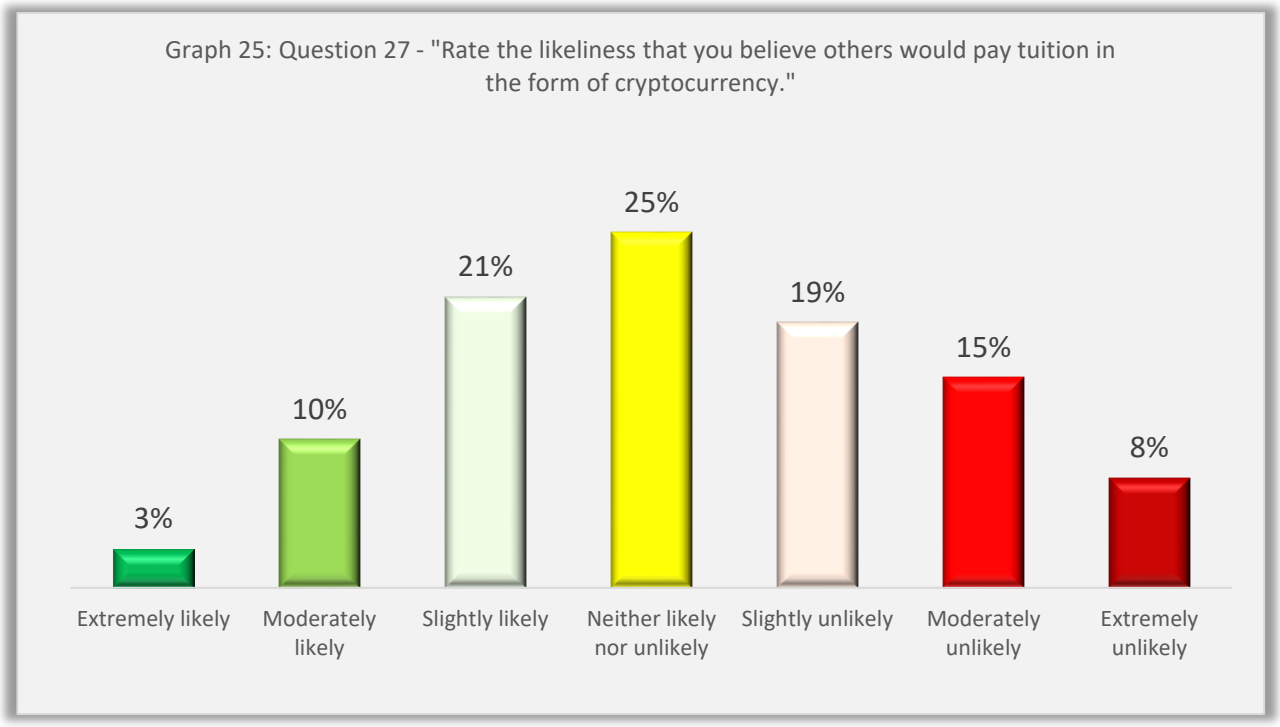
Using cryptocurrencies for paying tuition requires a higher level of adoption, and the student body is clearly not there yet (Graph 23). But17% might very well use this service, and this spikes up to 36% with Seniors, and 40% with students took at least one block chain course outside WCOB.



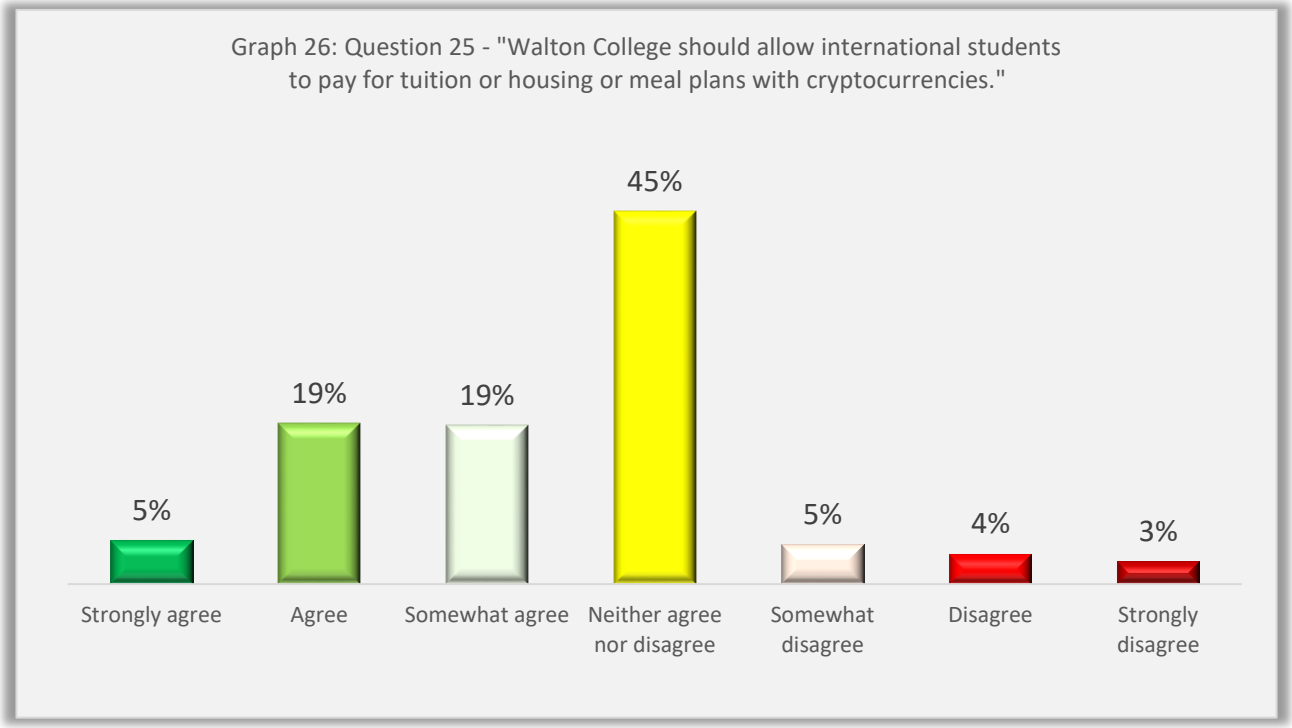
Shockingly, when offered a 1% reduction in tuition the U of A student body makes a blood-curdling about face, proving these business students follow monetary rewards like a frenzied Razorback (Graph 24). Caution, and no doubt so many well-deliberated answers are suddenly thrown into the howling wind! When receiving a 1% tuition reduction if cryptocurrencies were used in payment, U of A students responded favorably from 17% to a whopping 51%. Even in the Freshman group that is characterized by lower cryptocurrencies adoption, 44% would use a cryptocurrency if tuition were dropped by a mere 1%.



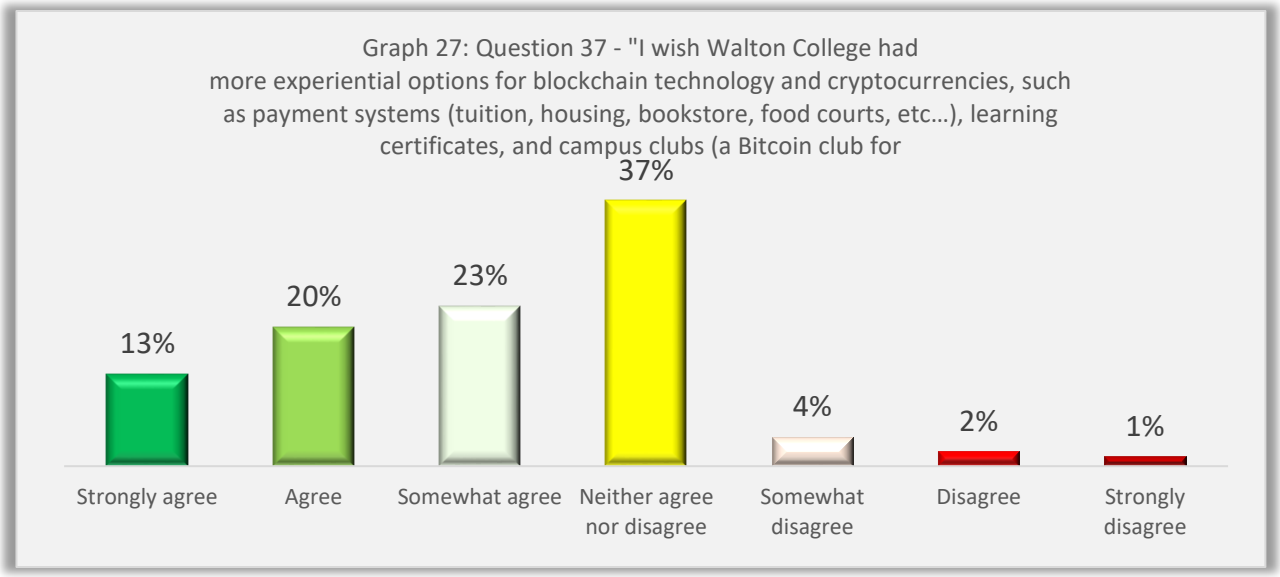
Interestingly the students' rate at higher percentage the possibility that others, but not themselves personally, would pay tuition in cryptocurrencies (Graph 25). So, there is the group of students that think that others have superior knowledge to them and are using cryptocurrencies more than they are. This was true from Freshmen to Seniors.



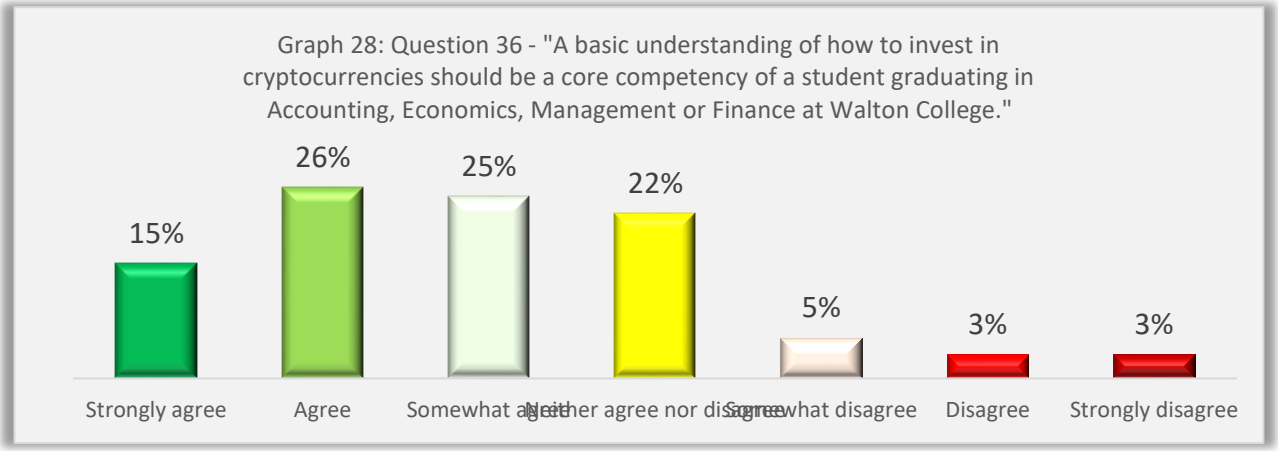
Although the sample size of international students in the survey is small, and thus there is no data for their own opinion on the possibility to pay tuition, housing or meal plans in cryptocurrencies, in general U of A students (43%) were favorable to that option (Graph 26). Although perhaps this response should be qualified since this offer was not intended for domestic students and it was largely, they that answered this question.



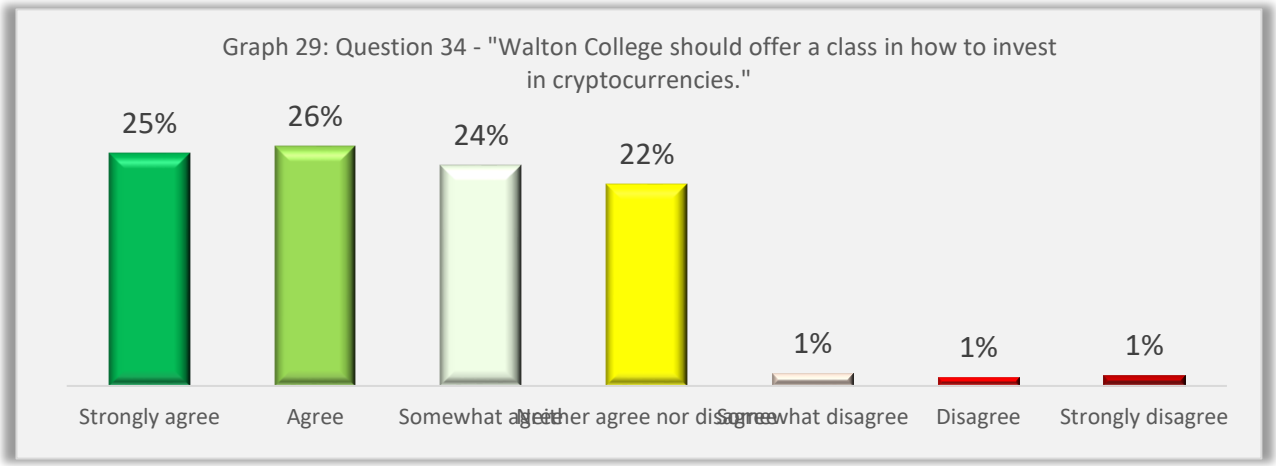
Students need more educational opportunities in the field of block chain and cryptocurrencies and they confirmed that by 56% agreeing that the Sam Walton Business College should offer more experiential options for this technology (Graph 27). Even Freshmen (46%) significantly supported this option.



More than a half of students agreed that investing in cryptocurrencies should be one of the core competencies of a student graduating in Accounting, Economics, Management or Finance at the Sam Walton College of Business (Graph 28).

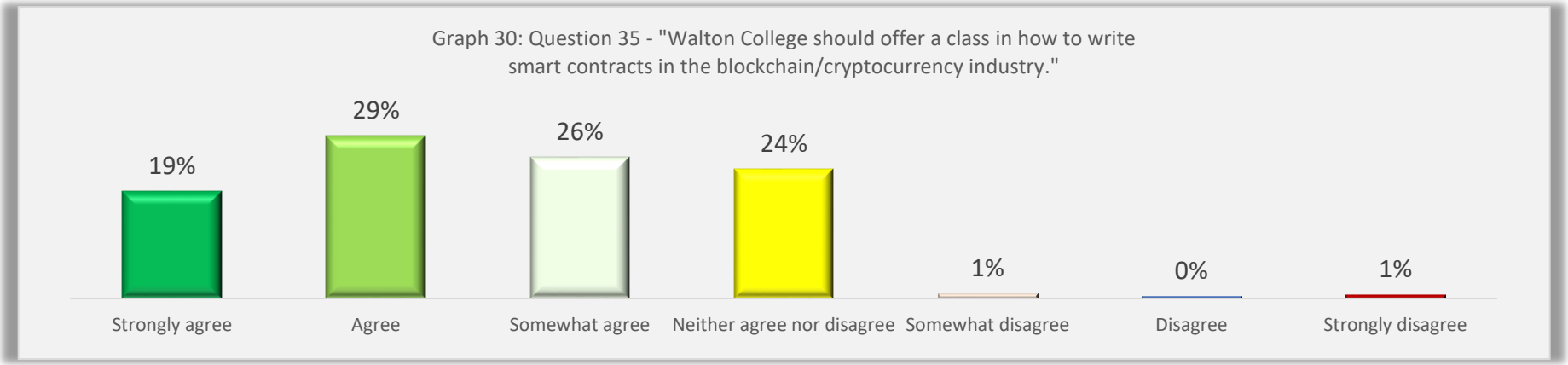


Students to a shocking degree (75%) believed there should be classes specifically both on how to invest in cryptocurrencies and on how to write smart contracts (Graphs29 and 30). Opposition to this was largely non-existent (3%).



Q34 Walton College should offer a class in how to invest in cryptocurrencies.

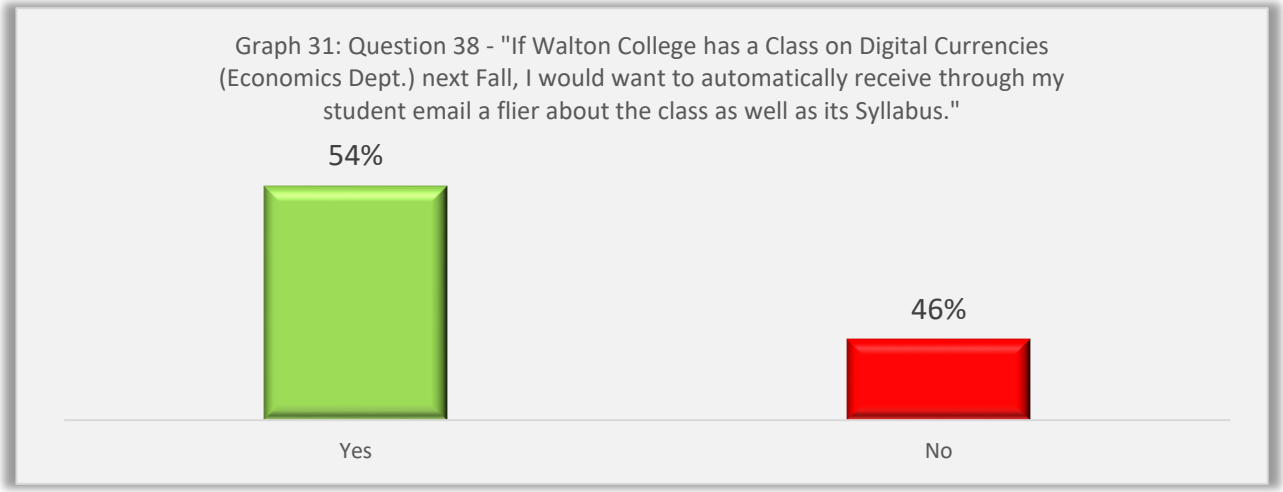
	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	110	25.06%	35	17.16%	21	40.38%	21	25.93%	26	36.11%	7	23.33%	17	42.50%	92	23.23%
Agree (6)	113	25.74%	55	26.96%	12	23.08%	21	25.93%	19	26.39%	6	20.00%	8	20.00%	104	26.26%
Somewhat agree (5)	104	23.69%	49	24.02%	12	23.08%	23	28.40%	14	19.44%	6	20.00%	8	20.00%	96	24.24%
Neither agree nor disagree (4)	95	21.64%	60	29.41%	5	9.62%	12	14.81%	11	15.28%	7	23.33%	7	17.50%	87	21.97%
Somewhat disagree (3)	6	1.37%	2	0.98%	0	0.00%	2	2.47%	2	2.78%	0	0.00%	0	0.00%	6	1.52%
Disagree (2)	4	0.91%	2	0.98%	1	1.92%	0	0.00%	0	0.00%	1	3.33%	0	0.00%	4	1.01%
Strongly disagree (1)	5	1.14%	0	0.00%	1	1.92%	1	1.23%	0	0.00%	3	10.00%	0	0.00%	5	1.26%
Count, N	437		203		52		80		72		30		40		394	
Mean, x̄	5.44393593		5.27093596		5.80769231		5.5375		5.77777778		4.93333333		5.875		5.39847716	



Q35 Walton College should offer a class in how to write smart contracts in the blockchain/cryptocurrency industry.

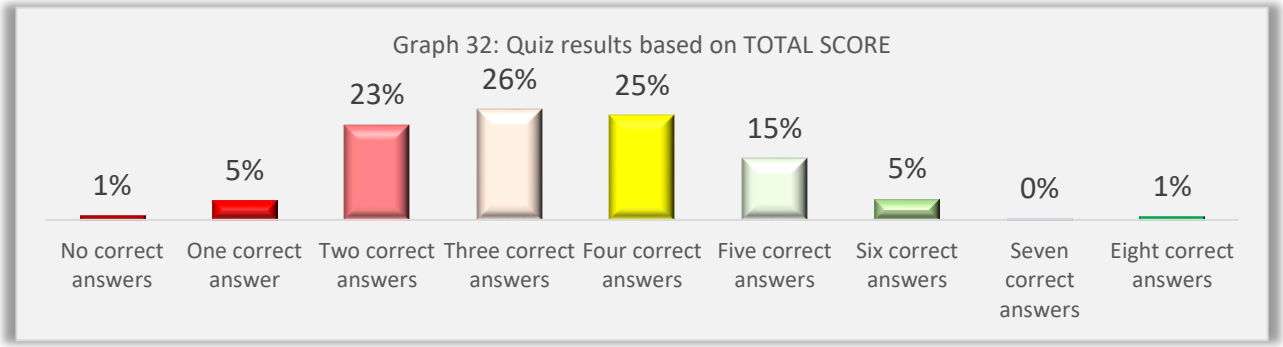
	Total sample		*What academic year of college are you in?*										*Are you taking at least one blockchain course*			
			Freshman		*Sophomore*		*Junior*		*Senior*		*Graduate School*		*Yes*		*No*	
Answers (coding)	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Strongly agree (7)	85	19.36%	29	14.22%	14	26.92%	14	17.28%	18	25.00%	10	33.33%	15	37.50%	69	17.42%
Agree (6)	129	29.38%	51	25.00%	19	36.54%	21	25.93%	29	40.28%	9	30.00%	11	27.50%	117	29.55%
Somewhat agree (5)	112	25.51%	54	26.47%	12	23.08%	25	30.86%	15	20.83%	6	20.00%	6	15.00%	105	26.52%
Neither agree nor disagree (4)	103	23.46%	66	32.35%	6	11.54%	20	24.69%	8	11.11%	3	10.00%	8	20.00%	95	23.99%
Somewhat disagree (3)	4	0.91%	3	1.47%	0	0.00%	0	0.00%	1	1.39%	0	0.00%	0	0.00%	4	1.01%
Disagree (2)	2	0.46%	1	0.49%	0	0.00%	1	1.23%	0	0.00%	0	0.00%	0	0.00%	2	0.51%
Strongly disagree (1)	3	0.68%	0	0.00%	1	1.92%	0	0.00%	0	0.00%	1	3.33%	0	0.00%	3	0.76%
Count, N	438		204		52		81		71		29		40		395	
Mean, x̄	5.38812785		5.16666667		5.71153846		5.32098765		5.77464789		5.6		5.825		5.33924051	

If the Walton College has a Class on Digital Currencies (Economics Dept.) next Fall, 54% of students would like to receive information about it automatically through their student e-mail (Graph 31). Surprisingly, Sophomores (78%) were most willing for this to happen.

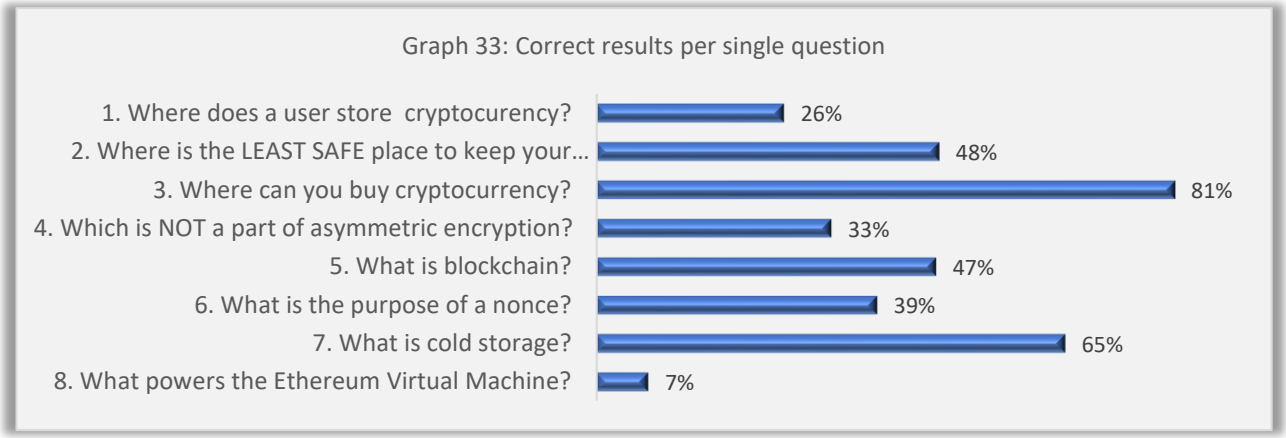


Quiz Results

The Quiz results confirmed that when they took the Survey, the U of A students at the Sam Walton College of Business already had a certain level of knowledge in the field of block chain and cryptocurrencies, since almost half of respondents had four or more correct answers (Graphs32 and 33). With further implementation of cryptocurrencies throughout the College in terms of usage and curriculum, this knowledge would undoubtedly improve.



The question with the most correct answers was, “Where can you buy cryptocurrencies?”, while the question with the least number of correct answers was, “What powers the Ethereum Virtual Machine?”.



Discussion

What is the Gestalt of this Survey?

While cryptocurrencies are still somehow perceived as geeky and are still not understood by most people or banks, U of A students seem not only aware of its importance, but want to learn more in an academic setting, both theoretically and experientially. While every other attempt to create a digital cash system did not attract a critical mass of users, cryptocurrencies have something that has provoked enthusiasm and fascination. This is certainly the case with the Seniors at U of A, as well as with those students who have taken at least one cryptocurrency or block chain course elsewhere.

Institutional investors have started to buy cryptocurrencies, and the U of A student body is not only aware of this but seems to want to get ahead of this by learning right now on how to best invest in cryptocurrencies. This would seem quite pertinent to the Finance Department, and not just the ISYS department. Given that payment systems would be intrinsically involved, Accounting would not be far behind in wanting input as well. It seems that a top business school on this issue can either stand beside and observe or become part of history in the making by rolling out an Introductory Cryptocurrency course, a Cryptocurrency Investment course even as an extension, as well as one on Smart Contracts course (for example, learning Solidity for Ethereum Smart Contracts) would seem appropriate for all top 30 business schools. Yet this has not been the case.

Critically, the Ethereum block chain can be thought to act like programmable money, allowing developers to explore a whole new world of technology and finance. Initially designed to be a decentralized platform, Ethereum was built with a language to potentially solve practically any mathematical equation. This programming language known as Solidity was initially proposed by Wood (2014), and further developed by the Ethereum Solidity team, headed by Christian Reitwessner.

Smart contracts allow for a whole new world of decentralized applications that interact on the block chain and have essentially made DeFi possible by underpinning the vast majority of all lending, borrowing, and synthetic asset platforms built on Ethereum. DeFi is set to heavily disrupt the traditional financial sector, but smart contracts could soon transform various sectors, including healthcare, insurance, real estate, and even the voting system. The students at U of A, and arguably at any top business school, sense this and according to this survey truly seem to want to be a part of this socio-economic technological revolution at both an academic and practical level. Not to mention the good jobs circling this paradigm

While teaching the caveats of cryptocurrencies, it is also critical to a well-rounded education to clearly delineate in what circumstances decentralized cryptocurrencies have a better chance to add-value as opposed to in what circumstances cryptocurrencies are less likely to succeed in adding value to customers and society. Students should be better equipped to understand where and when a cryptocurrency is a viable business proposition. If an academic institution does want to qualitatively increase cryptocurrency/block chain usage amongst its students, it should seriously consider offering the student body a tuition reduction where even a 1% tuition reduction seems potent enough to trigger widespread adoption at all year levels. This may also apply in marketing cryptocurrency usage in a commercial setting as well since an extremely slight price reduction apparently might trigger in a network effect, greatly enhancing not only the token value of that particular cryptocurrency but also the underlying traditional product being exchanged, whether use of banking products or paying for tuition with cryptocurrencies.

Conclusion

Higher education literature and policies have recently called for students to become co-designers of their own learning (Collis & Moonen, 2005; McCulloch, 2009). The purpose of empowering students to make decisions about teaching and learning practices is known in academic parlance as student voice (Hämäläinen et al., 2017). Admittedly, the research literature about student involvement in curriculum design is still scarce (Bovill et al., 2011). Furthermore, previous student voice initiatives concerning curriculum design have primarily centered on individual courses (Bell et al., 2019; Brooman et al., 2015; Bunnell & Bernstein, 2014). Whereas the recommendation here is to create multiple courses and institutionalize relevant block chain/cryptocurrency usage-experiences specifically to increase the likelihood of securing a job upon matriculation.

More to the point, what can students' voices realistically add to the process of curriculum development that teachers in Higher Education cannot deliver? The premise herein is that students at the Sam Walton College of Business have unique input given that the Information Systems there is top-tier worldwide, and these students could very well be the block chain/cryptocurrency leaders of tomorrow. This local student survey has global implications; and if the student voice is to be heard then it is important that value take concrete form (Seale, 2009). The urgency peaks when the students speaking are embedded into the scholastic environment producing the most sought-after jobs in the world: block chain related employment. The curriculum sought-after is job-driven with the Sam Walton College business students acting as a quite unique conduit of assessing future employment for students of other business colleges worldwide.

But should these Razorbacks partake in global higher education curriculum design? After all, curriculum design is a process of planning, constructing, implementing, and evaluating various pedagogical methodologies (Print, 1993). A significant agent that aids curriculum design in universities is supportive leadership, and curriculum design is often instigated by changes in professional accreditation policies in industry or academia (Freeman et al., 2014; Hurlimann et al., 2013). More specifically, higher education curricula are normally designed by professors and administrative staff (Bovill et al., 2011). Yet in this case, it seems Higher Education worldwide is institutionalizing educational opportunities in this area at a much slower pace than the private business sector is demanding.

Yet including student input in this process is even more daunting since while an immense literature exists as to professorial involvement in curriculum design (Huizinga et al., 2014), the research specifying student involvement in curriculum design is nascent (Bell et al., 2019; Chilvers et al., 2021; Ryan, 2020). But given the emerging magnitude of block chain technology and cryptocurrencies, it seems the time is ripe for Higher Education to create a more delineated literature by listening to these Razorbacks and instituting administratively well-supported classes in block chain technology, cryptocurrencies, smart contracts, as well as in how to invest in these tokenized assets.

Since every higher education professional is morally charged to cultivate the student's academic process toward economic self-reliance, Universities worldwide should take note of the largest job offering in quite some time, and in a budding field that could easily become disruptive and transformative at a global level. In this instance, advancing the curriculum to include the most transformative technology, which may include a new global money with far-reaching socio-economic effects, this teachable moment should not be missed by Higher Education.

Ultimately, this article not primarily about empowering students to have more control in determining curriculum. And although this article reports a small-scale study, and a single project in one higher education institution, it reveals that involving these specific students, who are embedded in a unique Business College whose ISYS department is world renown, into curriculum design makes sense. Furthermore, institutionalizing the insights of these students worldwide to enable our future leaders to have jobs relevant to what might very well be a new world order based on a technology wherein the Razorbacks, deep within the supply chain milieu of Walmart, J.B. Hunt and Tyson Foods, are galloping along the cusp of world history in the making.

Acknowledgement

I would like to thank the Razorback student body at WCOB for so willingly taking this survey to further the academic and career-enhancing opportunities at one of the premier scholastic institutions in the field of Information Systems: The University of Arkansas at Fayetteville.

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Conflicts of interest/Competing interests: None.

Declaration

The author of this article appearing in this Journal is solely responsible for the content thereof. The publication of this article does not constitute and is not to be deemed to constitute any representation by the University of Arkansas that the data presented therein is correct or sufficient to support the conclusions reached or that the experiment design or methodology is adequate. Furthermore, any opinions, discussions, views and recommendations herein are solely those of the author and not the University of Arkansas

References

Bell, A., Potter, S., Morris, L.-A., Strbac, M., Grundy, A., & Yawary, M. Z. (2019). Evaluating the process and product of a student-staff partnership for curriculum redesign in film studies. *Innovations in Education and Teaching International*, *56*(6), 740-750. https://doi.org/10.1080/14703297.2019.1588768

Bovill, C., Bulley, C. J., & Morss, K. (2011). Engaging and empowering first-year students through curriculum design: perspectives from the literature. *Teaching in Higher Education*, *16*(2), 197-209. https://doi.org/10.1080/13562517.2010.515024

Brooman, S., Darwent, S., & Pimor, A. (2015). The student voice in higher education curriculum design: is there value in listening? *Innovations in education and teaching international*, *52*(6), 663-674. https://doi.org/10.1080/14703297.2014.910128

Bunnell, S., & Bernstein, D. (2014). Improving engagement and learning through sharing course design with students: A multi-level case. *Teaching and Learning Together in Higher Education*, *1*(13), 2. http://repository.brynmawr.edu/tlthe/vol1/iss13/2

Chilvers, L., Fox, A., & Bennett, S. (2021). A student–staff partnership approach to course enhancement: Principles for enabling dialogue through repurposing subject-specific materials and metaphors. *Innovations in Education and Teaching International*, *58*(1), 14-24. https://doi.org/10.1080/14703297.2019.1675530

Collis, B., & Moonen, J. (2005). *An on-going journey: Technology as a learning workbench*. University of Twente. https://ris.utwente.nl/ws/portalfiles/portal/5134457/rede_Collis_Moonen.pdf

Freeman, R., Millard, L., Brand, S., & Chapman, P. (2014). Student academic partners: student employment for collaborative learning and teaching development. *Innovations in Education & Teaching International*, *51*(3). http://dx.doi.org/10.1080/14703297.2013.778064

Hämäläinen, R., Kiili, C., & Smith, B. E. (2017). Orchestrating 21st century learning in higher education: A perspective on student voice. *British Journal of Educational Technology*, *48*(5), 1106-1118. https://doi.org/10.1111/bjet.12533

Huizinga, T., Handelzalts, A., Nieveen, N., & Voogt, J. M. (2014). Teacher involvement in curriculum design: Need for support to enhance teachers' design expertise. *Journal of curriculum studies*, *46*(1), 33-57. https://doi.org/10.1080/00220272.2013.834077

Hurlimann, A., March, A., & Robins. (2013). University curriculum development – stuck in a process and how to break free. *Journal of Higher Education Policy and Management*, *35*(6). http://dx.doi.org/10.1080/1360080X.2013.844665

McCulloch, A. (2009). The student as co-producer: Learning from public administration about the student–university relationship. *Studies in higher education*, *34*(2), 171-183. https://doi.org/10.1080/03075070802562857

Print, M. (1993). Curriculum development and design. http://www.worldcat.org/oclc/1042116102

Ryan, C. (2020). Students learning as researchers of curriculum in an undergraduate programme. *Innovations in education and teaching international*, *57*(6), 644-654. https://doi.org/10.1080/14703297.2019.1673201

Seale, J. (2009). Doing student voice work in higher education: An exploration of the value of participatory methods. *British Educational Research Journal*, *36*(6), 995-1015. https://doi.org/10.1080/01411920903342038

Wood, G. (2014). Ethereum: A secure decentralised generalised transaction ledger. *Ethereum project yellow paper*, *151*(2014), 1-32. https://files.gitter.im/ethereum/yellowpaper/VIyt/Paper.pdf