

Examining the Impact of Web 1.0 and Web 2.0 Tools on Students' Perspectives towards Agricultural Businesses

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Abstract

Employment and unemployment of the workforce are among the most significant issues in contemporary human societies. In our country, given the imbalance in economic, geographical, cultural, demographic, and political structures, these factors play a substantial role in the development process. One of the main obstacles to employment and hiring agricultural graduates is the poor image of agriculture. The aim of this study is to examine the impact of the tools and services offered on the website of the Agricultural Entrepreneur Students and Alumni Program, including podcasts, forums, a LinkedIn program group, news, reading materials, and profiles of entrepreneurs, on students' perspectives toward agricultural businesses. The statistical population of this research included students who voluntarily participated in organizing the first National Gathering of Agricultural Entrepreneur Students and Alumni. A mixed-method approach was used for data collection. The quantitative section was conducted using a survey and questionnaire. For analyzing the quantitative data, SPSS software version 21 was used. Qualitative data were collected through in-depth interviews and focus groups and analyzed using coding methods. The quantitative analysis revealed that among the tools on the Agricultural Entrepreneur Students and Alumni Program site, podcasts were

considered the most influential, whereas forums had the least impact. Additionally, qualitative findings showed that students recognized increased awareness, exposure to various entrepreneurs as reasons for the influence of podcasts, job opportunities, and entrepreneurial knowledge as motivations for continued participation in the forum, and the opportunity to reflect on topics and implement goals as reasons for the influence of the LinkedIn group for the Agricultural Entrepreneur Students and Alumni Program.

Keywords: Entrepreneurship, Agricultural Businesses, Web 1.0 Tools, Web 2.0 Tools

Introduction

The most critical factor in development within any society is human resources (Monavari Fard et al., 2012). Employment and unemployment of the workforce are significant issues in contemporary human societies. In our country, due to the imbalance in economic, geographical, cultural, demographic, and political structures, these factors play a substantial role in the development process (Zali & Razavi, 2007). Unemployment has become deeply rooted in developing societies, and governments are often unable to meet their societies' technological needs (Monavari Fard et al., 2012). The agricultural Industry, which can provide jobs for the workforce, offers a crucial chance for educated young people to find employment. Yet, even with the promising opportunities for educated individuals in this field, there continues to be a significant level of unemployment among agricultural graduates. Many show little interest in this field, often seeking employment in government or even unrelated sectors (Solimanpour, 2011). One of the main obstacles to the employment of graduates is the agricultural weak picture (Dyer & Berja, 2003). Agricultural students describe this field as mostly theoretical, with an uncertain future, moderate appeal, low social standing, being more suitable for men, and involving difficult coursework (Ebrahimi, 2013). In today's world, the number of young people reaching employment age is increasing, while

fewer are inclined to work in agriculture. Interest among young people in pursuing careers in agriculture has declined. For the majority, agriculture is largely absent from daily life, as their perceptions are formed not by knowledgeable exposure to agriculture, but rather by indirect observation or isolated experiences (Helmle, 2010). Today, internet use has transformed various aspects of life, including communication, scientific production and promotion, and learning. Students, one of the primary groups using the internet, have increasingly embraced it, as it is easily accessible in universities, making it a popular academic and leisure activity. Internet addiction is now a significant mental health concern among students (Ko et al., 2009). Web 2.0 tools, such as social networks, instant messaging, audio and video conferencing, and podcasts, allow users to participate in discussions and share topics (Eyyam et al., 2011). Recognized as a new web technology, Web 2.0 is widely used across the internet, enabling users to share not only news but also photos and videos (Bicen & Cavus, 2012). One of the key Web 2.0 tools is social networking, which can be valuable for enhancing student learning and influencing various aspects of life in the information age. These networks are accessible through a range of devices, such as laptops, tablets, and mobile phones (Wanpen, 2013). Another commonly used feature in web-based educational environments is the discussion forum, which provides students with a platform to discuss class topics outside the classroom. Discussion forums serve as alternative information sources for student learning (Zhi-Feng Liu et al., 2012). Podcasts, another Web 2.0 tool, are audio and video files in MP3 format that can be easily downloaded from the internet. Various devices, such as tablets, laptops, personal computers, mobile phones, and MP3 players, can be used to access them. A unique feature of podcasts is their accessibility without time or location restrictions (Kargozari & Zarinkamar, 2014). Podcasting, which has significantly grown over recent years, emerged in 2004 as an internet-

based alternative to radio networks, and users can download podcasts without needing special software (Hubackova, 2013). Limited research has been done on how web tools can influence students' understanding and perceptions of agricultural businesses. Thus, this research examines how the tools utilized on the Agricultural Entrepreneur Students and Alumni Program website affect students' opinions of agricultural businesses.

Previous Research

Ghasemi and Asadi (2010) stated that factors such as the mismatch between the current student intake capacity in universities and the future needs of the job market, the lack of alignment between educational content and job skills, universities' failure to instill a scientific spirit and a sense of service to society in students, unclear minimum academic and practical competencies for graduation, lack of familiarity among faculty members with processes in relevant production and service units, insufficient opportunities for scientific and practical training, faculty members' ineffectiveness in training the specialized workforce required by society, and the lack of emphasis on scientific and research priorities in universities are the primary reasons for graduates' difficulties in finding employment. As a result, entrepreneurship has been increasingly promoted as a solution to create jobs, boost gross national product, and enhance social welfare.

Findings from Khayri and colleagues (2011) indicate that, from the perspective of graduate students, the main barriers to employment for agricultural graduates include the lack of government support for the agricultural sector, limited financial capacity to create jobs in agriculture, and low interest in agricultural businesses. According to a study by Poursina et al. (2010), 61.1% of rural youth show no interest in agriculture as a profession, and 81.2% have a positive attitude towards it. Despite this positive attitude, 78.8% do not consider agriculture as a future career due to a lack of motivation, citing low income, high labor intensity, and uncertain

career prospects as the main factors reducing interest in agriculture among rural youth.

In a study by Solimanpour and Hosseini (2011) on the comparative perspectives of master's students regarding the development of entrepreneurship in agricultural higher education, it was found that there was no significant difference between the attitudes of married and single students toward employment. Thus, both married and single students shared a similar outlook on the role of universities in entrepreneurship. However, a comparison of the views of employed and unemployed students revealed a significant difference at the 5% level, indicating that employment status influenced students' perspectives on entrepreneurship in agricultural higher education.

Shafiei and Shabani Fami (2007) discovered that only 0.8% of students in the Faculty of Agriculture and Natural Resources at the University of Tehran had a positive outlook on employment in the agricultural sector, with the majority (96.6%) holding a neutral view. Furthermore, there was a significant negative relationship between agricultural students' attitudes toward employment in the sector and their spouses' educational level.

In a study titled "Patterns of Internet Use by Students in Agricultural Colleges in Iran," Movahed Mohammadi and Iravani (2002) found that respondents who did not use the internet cited reasons such as a limited number of computers, long waiting times, slow and unreliable internet speeds, lack of knowledge and skills, frequent disconnections, and lack of internet access in academic groups to avoid time wastage as barriers to internet use. In another study, PourAtashi and Movahed Mohammadi (2008), which analyzed factors influencing internet use among female agricultural students, found that the highest average usage was for email and university websites, while news groups and audio-visual conferences had the lowest average activity among respondents.

Mohebbi Esfali and Zamani Miandashti (2013) conducted a study on internet use by

undergraduate students at Ba'sat Educational Center, revealing that the highest average use of the internet was for searching information for assignments and projects (mean score of 4.01), while contacting professors had the lowest average (mean score of 2.56). Additionally, students cited limited computer availability, outdated and broken systems, and low internet speeds as major drawbacks of the campus's facilities.

In a study on internet dependence and its influencing factors among students, Mohammadbeigi and Mohammad Salehi (2010) identified that participation in forums was a significant predictor of internet dependence. Logistic regression results showed that student gender, marital status, and forum use were statistically significant predictors of internet dependence, while residence, living conditions, research involvement, and parental education were not found to have significant associations. Dehghani Poude et al. (2011) showed a positive and significant relationship between students' attitudes and four domains of internet use (email, file downloads, goal setting, and targeted searches). Students with higher self-efficacy reported more extensive and enjoyable internet use across different domains. This study also confirmed a significant positive correlation between self-efficacy and varied internet uses across different domains.

Wang and Yang (2012), in their study titled "Using Forums for Learning English," investigated 142 first-year students from the health sciences and medical fields at Taiwan University of Medical Sciences (with 72 students in the experimental group and 70 in the control group). They concluded that students using forums showed higher motivation for learning compared to the other group. However, there was no statistically significant difference between the experimental and control groups (Wang and Yang, 2012).

Hatami (2010), in his thesis, found that 74.4% of students reported low usage of social networks, 20.6% reported moderate usage, and only 5% had

high usage. Most students fell into the low-usage category, with a mean score of 11.59 and a standard deviation of 4.6, indicating that social network usage among students was limited and low.

Rasouli and Moradi (2011) concluded that the majority of students use the internet for an average of four hours daily and are members of at least one social network. Most students spend less than an hour of their internet time on social networks. The main reasons for social network usage were accessing information and news, making new friends, connecting with existing friends, and entertainment. However, most students did not use social networks for academic purposes. They were primarily interested in sharing films, daily news, entertainment content, photos, and texts on these platforms.

Aviriliam and Ode (2014), in their research titled “The Impact of Social Media Use on Academic Performance of Students,” studied 1,596 students from Makurdi University in Nigeria. Their findings indicated that 402 students used social media for less than an hour, 258 students for one to two hours, and 750 students (47% of respondents) were active and frequent users. They concluded that there is a correlation between students’ social media usage and their academic performance. The results showed that the frequency of social media visits can significantly affect students’ academic success.

Ghasemi (2010) conducted a survey of 58 students on podcast usage, which revealed that 40% of students did not use podcasts at all, 27% listened to more than one podcast, and around 10% downloaded all available podcasts. Among those who downloaded at least one podcast, 91% found it beneficial. Most students used personal computers to listen to podcasts, with 73% of podcast users indicating that they used them primarily to review classes they attended rather than classes they missed. Only 14% believed they might skip a class if podcasts were available, and a comparison of attendance rates showed no significant drop in attendance. Additionally, Ghasemi found that using lecture podcasts for

physics education at Hartford University was beneficial, especially for introductory courses, with 60% of students utilizing podcasts at least once during the semester and showing a positive response to the tool.

Evans (2008), in his research titled “The Effect of Mobile Learning through Podcasting in Higher Education,” studied 194 first-year business and management students at the University of London (96 females, 98 males) and gathered feedback by providing them with podcast files. The results indicated that 14% of students listened to podcasts on iPods, 6% on MP3 players, and 80% on PCs via web pages. Students appreciated the flexibility of podcasts, citing the ability to use them anytime and anywhere. They reported that podcasts were more effective tools compared to textbooks and lecture notes.

Obannon et al. (2011), in their study titled “The Use of Podcasts as a Replacement for Lectures and Its Impact on Student Progress,” examined 78 students at a research-intensive university in the southeastern United States. They found no significant difference in the academic progress of students who used podcasts for learning compared to those who attended traditional lectures. Additionally, the study revealed that 88.4% of participants were skilled in using MP3 players, and 56% had prior experience using podcasts before participating in the study. Only two students had listened to audio podcasts, and three had engaged with video podcasts before joining the research.

Obannon et al. (2011) found that barriers to podcast use included 74.2% of participants citing unfamiliarity with podcasts as a major obstacle, while 33% reported technical issues related to accessing and downloading podcasts.

In a study by Rahimi and Asadollahi (2011) titled “Investigating Iranian Students’ Readiness to Use Podcasts in Higher Education,” which included 120 students from the University of Tehran, it was found that 74.2% of students identified mobile phones as their primary means of accessing podcasts, followed by 43.3% using

computers, 30.3% laptops, 30% MP3 players, and 8.3% CD players. Regarding familiarity with podcasts, the study indicated that 17.5% of students had no knowledge of podcasts, 25% had low awareness, and more than half (56%) were familiar with them.

Najafi Pour et al. (2011) indicated that most students view podcasting as a powerful tool for complementing traditional teaching methods. The characteristics of podcasting foster a continuous connection between students and instructors, enhance student motivation, and accommodate diverse learning styles. It is particularly useful and effective in distance education, making learning more portable and accessible than ever before.

While some instructors express concerns about the use of podcasts and the implications of creating audio-visual archives of class sessions—potentially affecting students’ attendance—studies suggest minimal impact. Most students utilize this tool for review rather than as a substitute for attending classes. A small number of students indicated that having recorded sessions might encourage their non-attendance, but no studies have shown a significant effect on class attendance. The majority of students who accessed these recordings reported a positive impact on their academic abilities.

Additionally, the research by Dogan et al. (2012) on high school students’ goals and awareness regarding Web 2.0 tools revealed that many students use platforms like video sharing sites, Facebook, and search engines, but few are familiar with podcasts. One reason for this unfamiliarity is the lack of podcast integration in education. Their findings indicated that 73% of students had never used podcasts, 40% had never engaged in forums, and 41% had not utilized email services.

Ozdener and Gungor (2010) conducted a study involving 94 first-year students from the Faculty of Educational Technology and Computer at Marmara University. They divided the participants into a control group (42 students) and an experimental group (52 students) to

examine the impact of video podcasting on learning outcomes. The results revealed a significant difference in the sharing of video podcasts between the groups; however, this difference was not particularly favorable throughout the process. Additionally, while the use of video podcasts as a project submission tool did not affect the overall quality of the projects, it did enhance the students’ presentation skills, indicating that those who completed their projects via video podcasting were better prepared for their presentations. The comparison of test scores between the control and experimental groups showed no significant difference regarding the use of podcasts (Ozdener and Gungor, 2010).

Kargozari and Zarinkamar (2014) found that using podcasts as an educational tool for vocabulary learning proved to be more effective than traditional methods. A notable advantage of podcasts is that they alleviate concerns for students who miss classes, as they can catch up on missed content through these resources. Podcasts were also highlighted as valuable for improving reading, listening, speaking, pronunciation, and grammar skills.

Bicen and Cavus (2012) conducted a study examining Twitter usage habits among undergraduate students at the Faculty of Computer Education and Technology at Cyprus University. Their findings revealed that 40% of the students spend time on Twitter, a popular social media platform. Specifically, 11% of participants reported using Twitter for one hour per day, 12% for two hours, 30% for three hours, and 40% for more than four hours daily. Furthermore, the study found that 34% of participants accessed Twitter via mobile phones, 30% from home, 13% at university, and 30% at cafes.

Furciu and Gorski (2013) investigated online social network (OSN) usage among high school students, concluding that 95% of students use social media, leaving only 5% who do not. The results indicated that 21.74% of students utilize LinkedIn, 100% use Facebook, and 82.61% use

Google. The preferred method for accessing their accounts on social media sites was identified as using personal computers and laptops.

Research Methodology

The aim of this research is to examine the impact of tools used on the website of the program for entrepreneurial agricultural students and graduates, including podcasts, discussion forums, LinkedIn group activities, news articles, and introductions to entrepreneurs, on students’ perspectives regarding agricultural businesses. This study employs a mixed-methods approach, utilizing both quantitative and qualitative methods for data collection. The statistical population of this research consists of students who voluntarily participated in organizing the first national gathering of entrepreneurial agricultural students and graduates. The quantitative part was conducted using a survey method and a questionnaire tool. The face validity of the questionnaire was confirmed by professors and specialists in the field of agricultural extension and education. For the analysis of quantitative data, version 21 of the SPSS statistical software was used. Qualitative data were collected through in-depth interviews

and focus groups. The qualitative data were also analyzed using a coding method.

Results and Discussion

1. Descriptive Findings

1.1 Demographic Characteristics of Students
Table 1 displays the distribution of the personal characteristics of the individuals. As indicated in the table, the mean and standard deviation of the ages of the individuals are 24.18 and 1.94, respectively, with a maximum age of 28 and a minimum age of 21. The mean and standard deviation of the students’ GPAs are 15.78 and 1.02, respectively, with a maximum GPA of 18.85 and a minimum GPA of 14.10. In terms of gender, the highest number belongs to women, with a frequency of 18 (60%). Regarding living location, the majority are from urban areas, with a frequency of 25 and a percentage of 83.33%. In terms of educational level, the number of undergraduate and master’s students is equal, with a frequency of 14 (46.67%), while doctoral students have a frequency of 2 (6.66%). Additionally, the table shows that 20 individuals (66.67%) have internet access via mobile phones, 21 individuals (70%) have internet access in dormitories, and 23 individuals (76.67%) have internet access at home.

(n= ٣٠)"Table 1 – Distribution of Demographic Characteristics of Students"

Minimum	Maximum	Standard deviation	Mean	Percent	Frequency		
٢١	٢٨	١,٩٤	٢٤,١٨			Age	
١٤,١٠	١٨,٨٥	١,٠٢	١٥,٧٨			GPA	
				٦٠	١٨	Men	Gender
				٤٠	١٢	Women	
			٨٣,٣٣	٢٥		City	Living location
			١٦,٦٧	٥		Village	
			٤٦,٦٧	١٤		Bachelor’s Degree	Education Level
			٤٦,٦٧	١٤		Master’s Degree	
			٦,٦٦	٢		Doctorate	

		۷۶,۶۷	۲۳	Internet Access at Home
Percent	Frequency			
۷۳,۳۳	۲۲	Membership in the Discussion Forum		Internet
۷۳,۳۳	۲۲	Familiarity with LinkedIn Before Participation in the Program		Access in the
۴۶,۶۷	۱۴	Membership in the Agricultural Entrepreneurial Students and Graduates Program Group on LinkedIn		Dormitory Internet
۴۳,۳۳	۱۳	Listening to a Podcast		Access via Mobile
۳۰	۹	Collaboration in Podcast Production		
۲۰	۶	Hearing the term 'podcast' before collaborating on the program		

2Usage

Levels of Various Tools on the Agricultural Entrepreneurial Students and Graduates Program Website

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1-2-1Membership and Use of Tools

According to Table 2, student membership in the discussion forum and their familiarity with LinkedIn had the highest frequency, with 22 respondents (73.33%) participating. Membership in the Agricultural

Entrepreneurial Students and Graduates Program group on LinkedIn ranked next, with 14 respondents (46.67%). Additionally, 6 respondents (20%) had heard the term "podcast" before participating in the program.

(n= ۳۰)"Table 2 – Usage Levels of Various Tools on the Website"

1-2-2Usage of the Podcasts on the Agricultural Entrepreneurial Students and Graduates Program Website

According to Table 3, the video podcast “Introduction to the Program by the Conference Secretary, Dr. Nasser Zamani Miyandashti” had the highest frequency at 22 (73.33%). Following this, the podcasts about becoming an entrepreneur, such as “Think Like a Traveler” and “Start Your

Entrepreneurial Journey from University,” ranked second with a frequency of 20 (66.67%). The podcasts on “Secrets of Successful Female Entrepreneurs in Agriculture: Time Management, Staying at Work, and Direct Management” had a frequency of 8 (26.67%), while the podcast featuring Jamal Razaghi Jahromi, CEO of B.A Food Production Company, had a frequency of 6 (20%) and ranked last.

Table 3 – Use of Audio and Video Podcasts on the Site

Percent	Frequency	Podcast Title
۷۳,۳۳	۲۲	Introduction of the program by the meeting secretary, Dr. Naser Zamani Miyandashti
۶۶,۶۷	۲۰	Think like a traveler to become an entrepreneur
۶۶,۶۷	۲۰	Start your entrepreneurial journey from the university
۶۳,۳۳	۱۹	Mojgan Roustai, entrepreneurship In the Crocodile Farm
۳۶,۶۷	۱۱	The best time to start your entrepreneurial journey
۳۰	۹	Secrets of successful entrepreneurs
۳۰	۹	Kourosh Asadsangabi, successful agricultural entrepreneur
۲۶,۶۷	۸	Secrets of success of a national model female entrepreneur in agriculture: time management, staying at the workplace, and direct management
۲۰	۶	Jamal Razaghi Jahromi - CEO of B.A Food Production Company

1-2-3.Reasons for Not Joining the Agricultural Entrepreneurs Program Students and Graduates Group on LinkedIn
According to Table 4, among the reasons for not joining the Agricultural Entrepreneurs Program group on LinkedIn, the lack of

interest among students in the topics discussed in the group and a lack of skills in using LinkedIn’s features and tools had the highest frequency (23.33%). Following these, lack of time (frequency 6, 20%) and internet access issues (frequency 4, 13.33%) ranked next.

Table 4 – Frequency Distribution of Reasons for Not Joining the Group of Agricultural Entrepreneurs’ Students and Graduates Program on LinkedIn

percent		Reason for Not Joining
۲۳,۳۳	۷	Lack of Interest in topics discussed In the group
۲۳,۳۳	۷	Lack of skills In using LinkedIn features and tools
۲۰	۶	Lack of time
۱۳,۳۳	۴	Internet access issues

1-2-4 – Reasons for Not Joining the Discussion Forum
According to Table 5, among the reasons for not joining the discussion forum, the lack of time was the most frequent reason, with a

frequency of 3 (10%). The lack of interest in the topics discussed in the group (frequency 2 and 6.67%) and issues related to internet access and lack of skills in using the discussion forum, each with a frequency of 1 (3.33%), followed In the rankings.

Table 5 – Frequency Distribution of Reasons for Not Joining the Discussion Forum

frequency	Reason for Not Joining	
percent		
۱۰	۳	Lack of time

6,67	2	Lack of Interest in topics discussed in the group
3,33	1	Internet access issues
3,33	1	Lack of skills In using the discussion forum

1-2-5-Reasons for Not Commenting in the Discussion Forum

The findings related to the reasons for not commenting in the discussion forum, as presented in Table 6, indicate that a lack of

interest in the topics discussed in the group accounts for the highest frequency (17, or 14.2%). In contrast, the lowest frequency is attributed to a lack of skills In using the forum, with a frequency of 4 (3.3%).

Table 6 – Distribution of Frequencies for Reasons for Not Commenting In the discussion Forum

frequency		Reason for Not Commenting
percent		
56,67	17	Lack of Interest in the topics raised in the group
33,33	10	Internet access problems
26,67	8	Lack of time
13,33	4	Lack of skills In using the discussion forum

1-2-6-Reasons for Not Listening to the Podcasts on the Agricultural Entrepreneur Students and Alumni Program Website

The results from the sample under review In Table 7 indicate that 12 individuals (40%) cited a lack of interest in the topics

discussed in the group and not having enough time as reasons for not listening to some of the podcasts. Only 2 individuals (6.67%) mentioned a lack of skills in using the podcasts on the site as their reason for not listening.

Table 7 – Distribution of Frequencies for Reasons for Not Listening to the Podcasts on the Site

Frequency		Reason for Not Listening
percent		
40	12	Lack of Interest in the topics raised in the group
40	12	Lack of time
30	9	Internet access problems
23,33	7	Technical issues with the site

٦,٦٧	٢	Lack of skills in using the site's podcasts
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1-2-7-Visiting Different Sections of the Agricultural Entrepreneur Students and Alumni Program Website

According to the findings in Table 8, Individuals’ visits to the website had a mean of 16.06 and a standard deviation of 7.12, placing It in first priority. Visiting the agricultural students and alumni program on LinkedIn and reading others’ comments had a mean of 6.5 and a standard deviation of 7.4, ranking second. Visiting the forum and

reading others’ comments had a mean of 4.46 and a standard deviation of 5.2, making it the third priority. Visiting the agricultural students and alumni program on LinkedIn and providing feedback had a mean of 0.47 and a standard deviation of 0.94, placing It in fourth priority. Lastly, visiting the forum and giving feedback had a mean of 0.34 and a standard deviation of 0.93, ranking as the lowest priority.

Table 8 – Frequency of Visits to Different Sections of the Website

Rank	Standard deviation	Mean	
١	٧,١٢	١٦,٠٦	Visit the website
٢	٧,٤	٦,٥	Visit the agricultural students and graduates program on LinkedIn and read others' opinions
٣	٥,٢	٤,٤٦	Visit the forum and read others' opinions
٤	٠,٩٤	٠,٤٧	Visit the program for students and graduates in agricultural entrepreneurship on LinkedIn and provide feedback
٥	٠,٩٣	٠,٣٤	Visit the forum and provide feedback

1-2-8-Impact of the Tools of the Agricultural Entrepreneur Students and Graduates Program Website

1-2-8-1Impact of Podcast Production on the Agricultural Entrepreneur Students and Graduates Program Website

As shown in Table 9, among those involved In podcast production, 9 individuals (30%) reported that the Impact of producing podcasts on themselves included increased

motivation for entrepreneurship, while 7 individuals (23.33%) mentioned increased skills in using software, another 7 individuals (23.33%) noted Improved communication skills, and 5 individuals (16.67%) indicated enhanced filming skills

Table 9 – The Impact of Podcasts on Their Producers

Frequency percent	Reason for Improvement
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30	9	Increase in entrepreneurial motivation
23,23	7	Increase in skills In using software
23,23	7	Increase in communication skills
16,17	5	Increase in skills In filming

1-2-8-2Most Effective Tools of the Agricultural Entrepreneur Students and Graduates Program Website

The Information in Table 10 indicates that 21 individuals (70%) reported that among the tools used on the Agricultural Entrepreneur Students and Graduates Program website, the audio and video podcasts had the greatest Impact on them. Additionally, 18 individuals (60%) mentioned the introduction of entrepreneurs

as impactful, 6 individuals (20%) cited reading materials, 3 individuals (10%) referred to news, and 2 individuals (6.67%) identified the group of Agricultural Entrepreneur Students and Graduates on LinkedIn as an effective tool.

Table 10 – Most Effective Tools Used on the Agricultural Students and Graduates Program Website

Frequency		Tool percent
70	21	Podcasts
60	18	Introduction of Entrepreneurs
20	6	Readable Materials
10	3	News
16,17	2	Group of Agricultural Entrepreneurs and Alumni on LinkedIn
0	0	Discussion Forum

1-2-8-3Least Effective Tools on the Agricultural Students and Graduates Program Website

The findings In Table 11 indicate that 19 individuals (63.33 percent) identified the discussion forum as the least effective tool among the resources used on the Agricultural Students and Graduates Program website. Additionally, 15 individuals (50 percent) pointed to the group

for agricultural entrepreneurship students and graduates on LinkedIn, 11 individuals (36.67 percent) cited the website’s news section, 10 individuals (33.33 percent) mentioned the site’s reading materials, and one individual (3.33 percent) identified podcasts as the least effective tool.

Table 11 – The Least Effective Tools Used on the Agricultural Students and Graduates Program Website

frequency		Tool percent
63,33	19	Discussion Forum
50	15	Group of Agricultural Entrepreneurs and Alumni on LinkedIn
36,67	11	News
33,33	10	Readable Materials
3,33	1	Podcasts
0	0	Introduction of Entrepreneurs

1-2-9 – The Impact of Tools on Respondents’ Perception of Agriculture

The findings regarding individuals' views on agricultural businesses, presented in Table 12, indicate that the income from

agricultural businesses has the highest rank with an average of 4.4 and a standard deviation of 0.56, while career prospects have the lowest rank with an average of 3.9 and a standard deviation of 0.88.

Table 12 – The Impact of Tools Used on the Agricultural Image of Respondents In the Program for Student and Graduate Entrepreneurs In Agriculture

Rank	Standard deviation	Mean	
1	0,56	4,4	I realized that a good Income can be earned from some agricultural businesses
2	0,75	4,33	I found that many successful women are Involved in agricultural businesses
2	0,8	4,33	I realized that employment In the agricultural sector does not contradict a modern lifestyle
2	0,8	4,33	I learned that many successful Individuals are active In agricultural businesses
3	0,83	4,3	I realized that agricultural businesses contribute to the advancement of the national economy
4	0,73	4,26	I learned that agriculture allows for more creativity and innovation
5	0,66	4,2	I found that anyone can create a wonderful and new investment opportunity with agricultural businesses.
6	0,74	4,16	I learned that many agricultural businesses exist outside the farm and traditional agricultural environment
7	0,94	4	I realized that many people working In agriculture have a high social status
8	0,88	3,9	I learned that with agricultural businesses, I have a promising career ahead

Numerical Range: 1-5 (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

1-2-10-Advantages and Disadvantages of Tools Used in the Program for Student and Graduate Entrepreneurs in Agriculture

As shown in Table 13, among the advantages of the group for student and graduate entrepreneurs in agriculture on LinkedIn, sharing knowledge and skills (mean = 4.3, standard deviation = 0.7) ranks

first. Among the advantages of the forum on the program’s website, the ability to express and view diverse opinions on a variety of topics (mean = 4.1, standard deviation = 0.68) holds the second position. Among the advantages of the podcasts on the program’s website, the fact that podcasts do not expire and can be permanently archived (mean = 4.1, standard deviation = 0.76) ranks third.

Table No. 13 - Advantages and Disadvantages of Web 2.0 Tools from the Students’ Perspective				
Ran k	Stand ard deviat ion	Mean	Web 2.0 Tools"	
1	0,7	4,3	Sharing knowledge and skills	Advantages
2	0,72	4,03	Ability to express Ideas freely and get to know others' Ideas, thoughts, and preferences (ability to provide feedback and collaborate)	
3	0,89	3,9	Developing useful social partnerships	
4	0,83	3,8	Receiving criticism and suggestions, and getting quick responses and feedback	
1	1,2	3,1	Time wastage	Dis adv anta ges
1	0,68	4,1	- The ability to express and view diverse opinions on a wide range of topics	
2	0,79	4	In a forum, people of different ages share their perspectives and experiences, and they can provide definitive information on answering a specific topic.	

3	0,84	3,9	People returning to the site to see what' has happened regarding topics of Interest to them	Advantages	Program Site Forum
4	0,92	3,9	Improving skills in writing and providing understandable		
5	0,74	3,7	Creating an environment for discussion by storing any information posted about a specific topic, allowing others to view it at any time		
6	1,12	3,6	The presence of freedom of expression and the ability for people to write in any form they wish		
1	1,02	3,6	Posts may not be reliable and, instead of clarifying questions, they may create ambiguity and lead to more questions	Disadvantages	
2	1,09	3,36	Individuals may provide meaningless responses to topics that can be misleading and unhelpful		
3	0,98	3,3	"Individuals do not feel comfortable even when their ideas may be beneficial to others because site administrators can edit people's posts and also prohibit individuals from presenting their ideas".		
1	0,76	4,1	A podcast has no expiration date and can be archived permanently	Advantages	Podcasts of the program site
2	0,7	4,06	Usable on small playback devices (the desired content can be used on devices other than computers or does not require access to a computer during us		
3	0,9	4,06	The ability to listen to any section of the content, rewind and fast-forward, listen to a specific range of content, and other controls by the user		
4	0,99	3,63	A suitable way to enjoy and entertain		
1	0,71	3,96	Lack of the possibility for real-time feedback during use	Disadvantages	
2	0,80	3,8	High costs of telephone and Internet lines for consumers		
3	0,84	3,66	Internet bandwidth limitations		

Numeric range: 1-5 (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

2.Findings from Qualitative Reanalysis

This section presents the results from interviews with students, covering the reasons for students' continued participation in the forum, reasons for lack of continued participation, the positive impact of the

Agricultural Entrepreneurship group of students and alumni on LinkedIn, reasons for the lack of Impact of this group on LinkedIn, reasons for the effectiveness of podcasts, and reasons for podcasts' ineffectiveness from their perspective. The second part of this section includes the results from a focused group discussion session with seven students (five boys and two girls), In which they discussed the most effective tools on the site, the reasons for their effectiveness, and related strategies from their perspective.

2-1-Results from Student Interviews

2-1-1Participation in the Forum

2-1-1-1Reasons for Continued Student Participation in the Forum

One reason for continued participation in the forum of the Agricultural Entrepreneurship program, as indicated by the students, is their interest in entrepreneurship topics. For example, students expressed their interest In entrepreneurship, saying, "I like entrepreneurship topics, and when I read interesting discussions and opinions that friends had shared in the forum, I realized there were fascinating insights. This, in turn, sparked my interest in entrepreneurship, and I even went on to research the same topics myself. Through this research, I found even more valuable and interesting information about entrepreneurship that I hadn't known before, which is why I really want to continue participating in these discussions." The interviews revealed that this interest in entrepreneurship topics motivates students to continue participating in the forum of the Agricultural Entrepreneurship program. It can be said that an increase in entrepreneurship awareness contributes to students' continued participation in the forum. They mentioned, "I wasn't very aware of entrepreneurship activities and

topics before, but I would check the program's forum from time to time and read the discussions. Each time I visited, I noticed that even more interesting topics had been posted. Sometimes I'd have questions, and when I returned to the forum, I'd find the answers by reading others' comments and discussions. These topics increased my knowledge and awareness compared to before." Another reason students cited for continued participation in the forum was the potential for job opportunities. For instance, students said things like, "I used to have no knowledge of entrepreneurship or even some agricultural topics. Reading posts on the forum and gaining motivation to follow the discussions sparked ideas about entrepreneurship in my mind, which made me hopeful about my career prospects. I even realized that pursuing entrepreneurial activities could make my future career path much easier.

2-1-2-1-Reasons for Students Discontinuing Participation in the Forum

One reason for students discontinuing their participation in the forum is the lack of practical and scientific content In the discussions. They mentioned, "The topics discussed in the forum are very theoretical, and there aren't many entrepreneurs actively participating. The forum has more of a theoretical atmosphere, and questions are raised and answered without much practical or scientific insight. People could easily find answers to these questions with a quick search. If a few entrepreneurs were to join, share their experiences, and explain how they started, It would motivate us more and make it easier to follow a similar path." Some students also found the forum topics uninteresting. For instance, some said, "I used to check the forum regularly, but since the content wasn't relevant to me, I didn't focus on It much. The discussions didn't interest me because I felt that other students' comments were at my level, possibly just

ideas that came to them spontaneously, without much specialization.

2-2-1-The Impact of the Agricultural Entrepreneurship Student and Alumni Group on LinkedIn

2-2-1-1Positive Impact of the Agricultural Entrepreneurship Student and Alumni Group on LinkedIn

Students also highlighted the impact of the Agricultural Entrepreneurship Student and Alumni Group on LinkedIn. They discussed reasons why this group can be influential, one being the thought-provoking and professional nature of the topics. They said, "Since there are experts in agriculture who are members of the group and share their Insights, I found their comments interesting and useful. I reflected on their feedback, which somewhat enhanced my knowledge of entrepreneurship. Of course, I need more study to consolidate this knowledge, but the discussions sparked new ideas for me and increased my interest In entrepreneurship and entrepreneurial learning." Another reason mentioned was the dissemination and realization of entrepreneurial goals. Students commented, "The Agricultural Entrepreneurship Student and Alumni Group on LinkedIn has helped spread entrepreneurial goals on this social network, increased my awareness and interest In entrepreneurship, motivated me to start working in the field of caviar fish, and helped me realize my personal goals."

2-2-2-1Reasons for the Lack of Impact of the Agricultural Entrepreneurship Student and Alumni Group on LinkedIn

Students also cited reasons why the group may lack impact on LinkedIn, including lack of awareness of the topics discussed in the group and lack of Interest in the group's discussions. Some students said, "I wasn't a member of this group, so I didn't participate or benefit from it. I'm not Involved and have

no knowledge of the group on this network, possibly because I haven't engaged or read what's been discussed." Another comment was, "Although I am a member of this group, I'm not interested in the topics discussed. Not many topics are even raised, and those that are don't get much discussion or attention to make an impact on it's audience."

2-3-1-The Impact of Podcasts

2-3-1-1Reasons for the Effectiveness of Podcasts

From the students' perspective, one reason podcasts are effective Is because they increase awareness and knowledge. For example, they said, "Since I'm interested in entrepreneurial activities and related topics, listening to these podcasts has increased my knowledge in this area, boosted my motivation, and given me more energy for entrepreneurial activities. These podcasts were clearly about entrepreneurship, which motivated me to listen. I gained a lot of information by listening, but if they were even richer in content, it would increase our knowledge even more." Students also noted that one Impactful aspect of the podcasts was becoming familiar with different entrepreneurs. Some mentioned, "Listening to the podcasts helped me get to know entrepreneurs and understand the challenges they faced In reaching their goals and how they solved their problems. I realized what steps are needed to become an entrepreneur and that every failure can be a step toward success. Success isn't random; It requires finding solutions to problems to reach our goals. Sitting idly by doesn't solve anything; you have to work hard to succeed."

Another reason for the podcasts' impact was that they created a sense of wanting to become an entrepreneur. Some students commented, "Listening to the podcasts made me feel that I, too, could become a good and successful entrepreneur if I have perseverance and confidence. It encouraged

me to think of new ideas and to focus on realizing them to succeed like other entrepreneurs." The quantitative results also confirmed this, showing that among the tools available on the Agricultural Entrepreneurship program site, audio and video podcasts were the most effective (frequency: 21, percentage: 70%). Students also noted their preference for audio-visual over text-based content as a reason for the effectiveness of podcasts. They said, "I generally like these kinds of formats, even If the content isn't directly related; I'll listen to It as long as it's audio-visual. I'm not very interested in reading text, but when something is audio-visual, I listen more attentively. Using audio-visual content keeps people more engaged and motivated."

2-3-2-Reasons for the Ineffectiveness of Podcasts

One reason podcasts were not impactful for some students was the overly emotional tone of some content. They commented, "Some of the podcasts I listened to were irritating. Honestly, I couldn't fully understand what they were about; they were overly emotional and, in my opinion, not very interesting." Another reason mentioned was that the podcast titles were uninteresting. Some students said, "The podcast titles weren't appealing, and sometimes the titles didn't even match the content. When I listened, I thought they could have produced the podcasts better. It might be that they were either pressed for time or Inexperienced in creating content."

2-2. Results of the Focus Group Session

2-2-1-The Most Effective Tools on the Website for Entrepreneurial Agricultural Students and Graduates, and Reasons for Their Effectiveness

One student commented on the effectiveness of the website's tools, explaining why they found podcasts to be the most impactful: "In my opinion, podcasts are more effective than other tools on the site. Listening on the radio

or watching on TV has a much greater impact. Many people won't take the time to read the same content on paper or search for It online, even if they're interested in it. For example, when I met Engineer Asad Sangani, I understood his entire biography through conversation. But when he gave me two pages to read, I couldn't bring myself to go through them. I learned everything from talking to him and from our interview. Many people, including the general public, may have difficulty reading, and they'd rather think outside of that format. The majority find it easier to engage with audio podcasts rather than reading material. LinkedIn focuses on specific topics, allowing for deeper and more professional discussions on a particular subject, whereas forums are more general. For example, presenting an entrepreneur's biography through a podcast might cover many aspects without focusing on one specific point. However, on LinkedIn, there might be an in-depth discussion on entrepreneurial learning, so conversations on LinkedIn become more In-depth. I've personally posted on LinkedIn. It doesn't have complete coverage, but it does attract a specific audience. The ability to post videos on LinkedIn allows people who come for a podcast or video to engage in a discussion while watching or listening to it.

During our involvement with the group activities, we had to find good content, edit it, or conduct interviews, considering multiple aspects. It became ingrained, without needing to chase It. Creating podcasts involves multiple facets, like gathering content, conducting interviews, and meeting entrepreneurs in person and talking to them. When these activities are repeated, the principles become ingrained in the mind subconsciously. The benefit of podcasts Is that, as they Increase in number, someone interested in listening will start absorbing key principles subconsciously after watching a few. For me, two standout points were: one,

the focus an entrepreneur places on learning; and two, the importance they place on personal relationships and the connections they can build with different people.

For instance, an entrepreneur needs to be able to connect with various people to succeed, no matter how much they know or how specialized their skills are. They need to have relationships across different areas. People certainly learn more by creating a podcast than just listening to one.”

Another student shared, ”In the TOEFL test, there are four skills, and everyone has a preference for one. Personally, I prefer listening over reading. So, when one of my classmates says that podcasts are more effective, I agree, but It varies by person. Some may not enjoy podcasts at all or understand written material better. I’ve mostly listened to audio podcasts myself. The word ‘podcast’ was new to me, and I found it interesting. For example, I really liked the introductory podcast for the program, especially the visual one. A podcast with moving visuals Is even more impactful. Like the podcast about crocodile farming in Qeshm by a woman—if she explained with moving visuals, it would have been even better.

Time and cost efficiency are essential for podcasts. With minimal time, we can gain a wide range of information. Podcasts are better than newspapers and magazines because they’re constantly updated. Once a newspaper issue is out, It can’t be reused for another issue. Podcasts, like Dr. Minai’s, the crocodile farming one, and the entrepreneurial journey podcast, greatly impacted me. They broadened my mind toward innovation and positive ideas, helping me make better decisions about my future. Now, I’m thinking more clearly about what I want to do, and the idea of possibly raising crocodiles came to mind. It was fascinating—not just because of crocodiles but because it

showed how even the smallest endeavors can yield the highest returns.

“Many times, there are people who, for example, make the highest Income just from egg packaging. One challenge with LinkedIn is that It caters to a specific group. LinkedIn targets a specific audience, but podcasts have broader reach and can deliver a large volume of high-quality information to many people. If there was a section in the podcasts for users to leave comments, it could serve both the role of LinkedIn and a forum. Podcasts have the potential to create a focal point where people can share their thoughts. On LinkedIn, even non-experts sometimes leave comments that might be irrelevant. In the LinkedIn podcast section, it draws in its main audience. A limited group on LinkedIn might participate, and they may not even be professionals, yet they still share opinions, whichh can be challenging.

The speed of dissemination, broad reach, and cost and time savings in creating podcasts are very significant discussions. Another person mentioned, ‘Podcasts, whether audio or visual, have a greater Impact because an entrepreneur shares their experience In their own words, whichh I think has more Influence. I listened to audio podcasts, but the video podcasts didn’t load for me, so I borrowed them from friends and watched. Each had something valuable. They shared insights on the entrepreneurial path, experiences, and qualities of entrepreneurs, and I could take something away from each. In my view, podcasts weren’t the most impactful just because others started discussions based on them, but I also joined In on the conversations inspired by the podcasts.”

"Alongside LinkedIn, the podcasts were also effective. Most of the students were members of the forum, where they felt more comfortable sharing opinions and discussing various topics. The discussions in LinkedIn were more specialized and professional,

whereas the forum was more general, and many felt more at ease expressing themselves there, resulting in a greater variety of opinions compared to LinkedIn.

I think each discussion platform on the site had its specific audience. For example, I preferred LinkedIn because it was relevant to my work, and I could find valuable content and specialized opinions. I also paid attention to who commented and what they said. Although I would occasionally check the forum, its topics were less relevant to my work and less engaging for me. I knew that the comments in the forum were more on the level of my peers and often reflected spontaneous thoughts rather than in-depth expertise.

Another participant shared their perspective on the most effective tool, saying, ‘In my opinion, the forum was more impactful because discussions were open-ended. If someone watched a podcast and had a question, they couldn’t ask it there, but in the forum, they could easily pose their questions and get answers from others’ responses.

"Although the podcasts weren’t large in size, downloading them from the site took some time and cost. While It’s convenient to have podcasts available to listen to anywhere, the forum allows for a question-and-answer format, accessible anytime and without any cost. For me, three of the podcasts didn’t open—one audio and two video.

I think the most effective part is the forum. For instance, it boosted my motivation for entrepreneurship; I never thought I might want to become an entrepreneur one day, but the forum discussions inspired me to consider it. Topics like the definition of entrepreneurship were interesting and helped me realize that my previous understanding was quite different from the concepts discussed. I used to think anyone In agriculture could be an entrepreneur, but the forum discussions showed me there’s more to it.”

I explored additional aspects of agricultural entrepreneurship and recognized my previous narrow perspective on careers In agriculture.” Learning about these subjects expanded my point of view. Another student stated, “I went over all the podcasts, news, and articles on the website, but I concentrated more on following LinkedIn rather than the forum.” The most significant aspect of this event was the planning and creation of the podcasts. From an entrepreneur interview, I obtained valuable insights that I had not anticipated, and learned little about job market before. Discovering the beginnings, progress, and current status of these entrepreneurs was captivating and aided me in defining my own entrepreneurial trajectory.

Another student chimed in, stating that while they didn’t visit the site, they believe that professionally made podcasts are more impactful than just reading or watching a video. A podcast may aim for specific objectives, directing listeners towards a particular conclusion. An effectively produced podcast can be just as educational as a face-to-face meeting.

A podcast follows a pre-determined format, making it easier to organize and potentially more effective. It Is also more customized, enabling listeners to fast forward, rewind, and manage the experience.

At last, a student who gained the most from the entrepreneur profiles on the website stated, “I have been visiting the site regularly ever since I found it, mainly to expand my knowledge about the entrepreneurs. I am particularly fascinated by one entrepreneur, and I have reviewed his profile three or four times in order to gain a better understanding of his work. I also found some of the other entrepreneurs who were featured to be intriguing. This specific entrepreneur, dedicated to social services, greatly motivated me. In a recent exam, I was questioned about my preferred

entrepreneurial focus area, and I selected agricultural social services and natural resources as my top choice. Coming to this website has provided me with the guidance needed to shape my career choices through the knowledge I have obtained.

Conclusion and Suggestions

The agricultural sector in Iran holds particular importance compared to other economic sectors due to its role in production, employment, foreign exchange earnings, food supply, and lower dependency on foreign currency. Agriculture is the largest economic sector in Iran after oil and services, accounting for about 20% of the Gross Domestic Product (GDP) and a significant share of non-oil exports. It is also a primary source of employment for a large portion of the country's population (Kohansal et al., 2009). Employment and unemployment of the workforce are among the most critical issues in modern human societies. In Iran, due to imbalances in economic, geographical, cultural, demographic, and political structures, these factors play a significant role in the development process (Zali et al., 2007). One of the challenges facing the country is graduates who lack the personal capabilities and essential skills to start suitable businesses. Instead of creating job opportunities, becoming entrepreneurs, and contributing to national development, they often seek employment themselves. Although the concept of employment does not fully convey entrepreneurship, entrepreneurial behavior serves as a source of innovation and flexibility, considered essential for new business creation in the economy (Ahmadi & Najafabadi, 2009). Web 1.0 and 2.0 tools can impact students' knowledge and attitudes toward agricultural businesses. The aim of this study is to examine the influence of tools used on the website of the Program for Entrepreneurial Agricultural Students and Graduates on

students' perspectives toward agricultural businesses.

Quantitative data analysis of this study indicated that more participants identified podcasts as the most effective tool among those available on the agricultural students and graduates program website, while forums were rated the least effective. The study also revealed that a higher number of students cited a lack of interest in the topics discussed in the LinkedIn group of the program and lack of skills in using the platform as reasons for not joining. Meanwhile, a lack of time was the reason for not joining the website forum. The findings from studies by Ghasemi (2010), Hatami (2010), and Najafi et al. (2011), as well as the qualitative results of this research, partially confirm the effectiveness of podcasts.

Qualitative analysis findings revealed that increased awareness and information, familiarity with different entrepreneurs, embedding of principles in the mind, and preference for audio and visual files were reasons for the influence of podcasts. Conversely, factors like emotionality and uninteresting titles were reasons for the lack of influence of podcasts. Interest in entrepreneurial topics, job creation, and raising awareness in entrepreneurship were reasons for students' continued participation in the forum. Meanwhile, the lack of practical or scientific content and uninteresting topics were reasons for discontinuation of participation. Reflecting on the topics discussed, professionalism, spreading entrepreneurial goals, and implementing and realizing mental goals were reasons for the influence of the LinkedIn group. In contrast, a lack of awareness of the topics and disinterest were reasons for its lack of influence. Additionally, focus group findings showed that most participants identified podcasts as the most effective tool, while some considered the forum and LinkedIn somewhat effective.

Proposed Solutions

- 1.Given that the quantitative results of the study indicated that the forum was the least effective tool on the site, it is recommended to present more cohesive and impactful discussions in the forum. Efforts should be made to invite successful entrepreneurs to join the forum and answer users’ questions.
- 2.Raise awareness to encourage people to join the site and participate in discussion.
- 3.Podcast Interviews with Top Entrepreneurs: Interviewing successful entrepreneurs for the podcasts can motivate the audience to pursue entrepreneurship, helping them to draw inspiration and increase their confidence in the field.
- 4.Prioritize Visual Podcasts: Focus on creating video podcasts, especially animated content, over audio-only podcasts. This approach was also suggested in the qualitative section of the study.
- 5.Considering the qualitative results, which indicated that a lack of appealing titles affected the impact of podcasts, it is recommended to choose engaging titles for the site’s podcasts.
- 6.Shift forum discussions and the LinkedIn program group for entrepreneurial students and alumni from theoretical content towards more practical, application-focused content.
- 7.Determine podcast topics based on student needs and assessments in the forum and LinkedIn group.
- 8.Ensure that podcasts are produced with high quality and professional standards.

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