Do digital skills development factors predict the online journalism readiness of mass communication students?

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*A*bstract

While Internet technologies have gradually transformed how news is produced and consumed, journalism schools have been challenged to match the online skills they offer with industry needs, in order to produce 'online-ready' graduates. This study explores the role of selected digital skills development factors (training content, training resources, students' online habits, industry experiences and online attitudes) in mass communication students' perceived preparedness for online journalism practice. The study employs a mixed-methods approach including a survey of 182 finalist mass communication students from five Rwandan universities, focus group discussions and a review of Online Journalism modules. Results showed positive correlations between the factors and students' online journalism preparedness, with industry experiences, students' attitudes to online tools and training resources having the greatest positive correlation. Al-

though training content and online habits had positive relationship with students' online journalism preparedness, these were statistically insignificant. Focus groups confirmed the importance of these factors in students' online journalism preparedness but highlighted negative educator attitudes towards teaching social media to 'digital natives', inadequate content and facilities as online skills development barriers. Ultimately, practical industry experiences were considered critical in imparting relevant online skills for future journalists.

Key words: Online journalism, Preparedness, Digital skills, Attitudes, Online habits, Training

Introduction

Modern media industry faces a paradigm shift where news is gradually produced and consumed online (Hamzah & Mustafa, 2014). With social media tools that leverage user-generated content, players in traditional news media like radio, TV and print must now adapt to the demands of this convergent journalism, also called online or digital journalism (Daniels, 2012).

On this online platform, practitioners can quickly access different story sources and have real-time engagements with audiences. This unfettered access to online tools by audiences has positioned them as co-producers and co-consumers of the stories with journalists, putting the relevance of the professional journalist on the spotlight. Furthermore, the emergence of a networked professional who must regularly engage with audiences has raised the digital skills bar, signaling the need to constantly demonstrate agility with diverse online tools to produce attention-grabbing content (Bor, 2014). Digital skills competence is now integral to most communication careers and hiring practices (Sutherland & Ho, 2017; Kanigel, 2014).

While journalism schools strive to adjust to the realities of the converged industry, a sound framework of the online skills needed to produce 'work-ready' professionals is lacking (Iyer, 2015; Jeanti, 2015). Devoid of such a framework, Sagrista & Matbob (2016) suggest adopting Ferrari's (2012) 'Digital Competence scale' (which amalgamates other frameworks) to outline the critical digital skills required for the 21st century media professional. Ferrari suggested skills in online searching, multimedia content production, social media communication, online ethics and strategy development as critical for the rapidly changing work environment. As these skills are also critical for future media professionals, this study argues that they can be contextualized to form the basis for assessing journalism students' readiness to work in an online environment.

Preparedness for work in online environments has been attributed to several factors including the nature of digital skills taught, the training environment, learners' online experiences and perceived comfort in using online tools (Jeanti, 2015; Sutherland & Ho, 2017). Evidence also suggests looking beyond knowledge gained to explore how attributes such as personality and attitudes regarding technology affect people's confidence in using different technologies (see Flores, 2010).

While Rwanda's media industry endeavours to leverage online tools for improved performance, evidence indicates that most institutions have not fully embraced online opportunities, partly due to inadequate online skills (Media High Council, 2014). A survey by the Rwanda Governance Board (2018) found that 90 percent of the industry stakeholders attributed this online skills inadequacy to uncoordinated skills development, especially between the journalism schools and media houses. Although Rwanda's media policy (2014-2020)

envisions intensified online tools use for quality content production, the survey showed lackluster online performance by media houses. With employers expecting 'industry-ready' graduates, exploring how different factors contribute to this readiness becomes pertinent. Although students' perceived digital competence has been explored in different domains (e.g. Sutherland & Ho, 2017), attention has rarely focused on the media industry, especially among future media practitioners in the developing world. In Rwanda, how such future professionals' 'online-readiness' is developed is not clear. Thus this study explored the role of the training content, training resources, students' online habits, industry experiences and attitudes to online tools in the students' perceived preparedness for online journalism work. What follows is a discussion on the relevant literature and study methods, before presenting the results and their implications.

Review of empirical literature

With the proliferation of Internet technologies in the media industry having challenged journalism schools to integrate digital skills in their curricula, journalism educators continue to adjust to these skills demands by reworking their content and teaching environment especially to simulate the modern digital newsroom. Studies have explored how these new technologies are impacting the teaching and learning of online journalism.

Becker, Vlad and Kalpen (2012) assessed the curricula content satisfaction of 2,195 graduates from 82 US journalism schools. Majority (>70 percent) attributed the content variety for their readiness to "write for the web, edit for the web, use and create blogs, and use the social media professionally" (p. 1). However, only a few were comfortable with doing web animation and using mobile-devices to produce stories. The researchers recommended the need to balance emerging technology skills in the curricula. Wotkyns' (2014) survey of Australian journalism students pursuing the new media convergence major established that 88 percent appreciated the diversity of digital skills taught. Moreover, employers endorsed the multimedia content production skills that these graduates possessed. Although some students expressed the risk of learning many digital skills but mastering none, the study suggested mastering a few skills like multimedia production toapply them in different contexts.

Kwanya (2014) surveyed 78 journalism students in four Kenyan universities and found that 62 percent of the respondents judged the digital journalism courses as mainly theoretical. They considered web design, online search, blogging, new media ethics and desktop publishing skills critical to their future news gathering and public relations work. The respondents recommended prioritizing Internet connectivity and more practical lessons with social media tools. Hodgson & Wong (2011) assessed how integrating blogs in a news writing course influenced the online skills development of 52 Hong Kong journalism students. Overall, the students appreciated the blogs as crucial to their online interaction skills and online portfolio for future job reference. To develop professional online habits among journalism students, Marinho & Pinto (2006) provided students with an Internet-enabled multimedia laboratory, an audiovisual lab and press room to provide them access with daily news. With time, the students had developed important multimedia content skills as they stretched their imagination with the digital facilities provided.

As heavy users of social networking sites, students develop different online habits of content generation and knowledge sharing (Jeanti, 2015; Stoker, 2015). While such habits build confidence and experience in using new media in different contexts, evidence also shows that some focused users learn critical skills from the technological interation while others remain passive (Deng & Tavares, 2015). For example, although journalism students may demonstrate newsgathering instincts with a mobile phone by taking photos and videos, Switzer & Switzer (2013) argue that most still need to learn how to convert the 'social use' to 'professional use' of such tools. Daniels (2012) explored how online behavior influenced industry perceptions of 203 undergraduate journalism students in a large university in the South-West USA. The students were heavily dependent on social media for their news and social interactions and considered this dependence positively for the industry and their career.

In their study, Diddi, Arvind & LaRose (2006) explored the formation of online news habits and how this related to professional outlook of 329 journalism students from University of Gothenburg (Sweden) and University of Tampere (Finland). The online habits were largely shaped by the students' 'digital capital' (the number of digital tools students actively participated in) and the social media tools recommended by the educators. Spyridou & Veglis (2008) investigated the perceived determinants and consumption patterns of online news by journalism students in Greece. More than half of the students got their news online, with

over 90 percent attributing their perceived readiness for their future online careers to their regular online news consumption. In Deng & Tavares's (2015) exploration of Hong Kong students' cognitive and socio-emotional benefits of new media use outside their formal learning context, students expressed positive attitudes towards social networking sites like Facebook in sharing important professional ideas. For example, Face book interactions strengthened the students' peer support as they engaged in professional discussions.

In line with Kolb's (1984) experiential learning theory which underscores the importance of work-related experience in linking theory with authentic practice, Gugerty (2011) assessed the field work experiences of public relations and advertising students and found that, while some students lauded the superiority of the on-the-job technology experiences, others considered such experiences as eye-openers to their digital skills gaps and also credible measures of their digital readiness. These results are consistent with Njuguna and Jju-uko's (2019) study which established that journalism students' participation in digital scholastic journalism helped to evaluate their professional readiness in producing tools like online newspapers and also improved their online writing skills. As underscored in Bandura's (1986) social cognitive theory which foregrounds the criticality of mastery experiences in developing people's confidence to perform given tasks, scholars like Nistor (2015) consider authentic field experiences as the crucial link between academic and industry preparedness. Similarly, online interactions with professional works may influence students to model professional behavior by vicariously learning through observation and participation in the performance of those in the industry (Bandura, 1986). Thus social media are appropriate platforms where journalism students can launch their careers through self-publishing and connections with other professionals.

Stocker (2015) interviewed six journalism students who had blogged for more than 12 months in fashion, popular music, football and darts. Students' blogging motivation mainly came from job adverts (with requirements of blogging experience), tutor encouragement and personal drive to build online visibility. Stocker therefore advocates for leveraging online tools like blogs to boost the students' creativity, initiative and online communication competencies. Davis' (1989) Technology Acceptance Model (TAM) underscores the importance of user perceptions of the attendant benefits and ease of use of technology in their attitudes regarding the successful use of ICTs. Thus the way students' perceive technology in their professional development is crucial since it affects their level of interest, engagement and confidence with the technology (Steensen, 2011).

With attitudes towards online interactions considered influential in students' learning online (see Aifan, 2015), establishing students' attitudes towards online tools for professional growth is significant. Lewis (2010) investigated 463 Oklahoma state university Public Relations students' attitudes regarding social media as a strategic communications tool. Students perceived social media positively and considered them critical facilitating job readiness among media students. Particularly, those who used social media as primary news sources regarded social media highly in professional development. The findings contrast with Obaid's (cited in Aifan, 2015) survey results on Saudi Arabian computer science students' attitudes towards social media tools to support skills development. Although most students found no significant value in the use of social media to support professional skills development, this was mainly attributed to the educators' own reluctance to show the way by connecting to the sites.

The foregoing discussion outlines key factors responsible for developing students' preparedness for the online work environment. With no systematic study addressing how these factors shape journalism students' online journalism preparedness, this study is considered a pioneer effort. It examines the role played by training content, training resources, online habits, work experiences and students' attitudes towards online tools in mass communication students' perceived preparedness to work in the online environment. The null hypothesis proposing no significant relationship between each of these factors and students' online preparedness was tested at 0.05 level of statistical significance.

Methods

This study employed a mixed-methods approach involving a survey, focus group discussions and review of online journalism modules. For the survey, Yamane's (1967) formula, i.e. $n = N/1+N(e)2$, was used to draw a systematic sample of 182 finalist undergraduate mass communication students from five Rwandan universities. This sample constituted 62 percent of the total student population of 293. Scale items for the questionnaire were derived from extant literature. Ferrari's (2012) digital skills framework was adapted and contextualized in journalism studies to test the students' perceived preparedness to perform online jour-

nalism research, communicate with different social media tools, create and share multimedia news stories, observe ethical online publishing and use online tools to solve organizational problems. Insights from Su-I Hou's (2017) Social Media Active and Engagement Levels and Rosen et al.'s (2013) 'Media and Technology Usage' sub-scale of the Media Technology Usage and Attitudes Scale, were used to define the online media habits items. Students' attitudes towards online tools reflected a modified version of selected items from Rosen et al's (2013) 'Attitudes' subscale of the validated Media and Technology Usage and Attitudes Scale by. Eight online media practitioners approved the face and content validity of the resulting five-point Likert-type instrument (where 1 = Strongly Disagree and 5 = Strongly Agree). Students' level of online journalism preparedness was derived from the composite of 'Agree' and 'Strongly Agree' (i.e. High online journalism preparedness) and 'Disagree' and 'Strongly Disagree' (i.e. Low online journalism preparedness), with those indicating 'Neutral' considered undecided or uncertain.

Five focus groups (comprising six students per journalism school) were developed from a purposive sample of any three students with high online journalism preparedness score and any three with the lowest online journalism preparedness score. Onwuegbuzie and Collins (2007) recommend six to nine participants per FGD and three to six FGDs for mixed designs, as was in our study. Targeting the high and low scorers facilitated a balanced view on how these made sense of online journalism preparedness and attendant factors. The findings were interpreted together with the responses from the questionnaire and FGDs comments – which we transcribed and coded under themes to facilitate triangulation of responses.

A pilot survey involving 20 randomly selected students (i.e. four from each journalism school) indicated that the instrument was reliable with a Cronbach Alpha value of 0.731 (see Faizan & Zehra, 2016). Descriptive and inferential data analyses were done to reveal the variable response patterns and relative contribution of the selected factors on students' online journalism readiness, to confirm or disconfirm the study hypotheses.

Results and discussions

Descriptive analysis of study variables

Out of the 182 questionnaires distributed, the usable questionnaires were 143 (i.e. response rate = 79 percent). To measure the respondents' online journalism preparedness, the composite scores for their perceived confidence in performing given online tasks were computed. Table 1 shows the response patterns.

I am confident in…	Generally Agree	Neutral	Generally Disagree
Conducting online journalism research	84.4	12.1	3.5
Communicating with different social media tools	76.7	12.9	10.3
Producing multimedia news stories	73.7	15.0	11.3
Observing ethical online publishing	80.4	15.0	4.5
Using online tools to solve different problems	85.3	9.9	4.8
AVERAGE	**80.1**	**13**	**6.9**

Table 1: Respondents' confidence in online journalism preparedness

From the results, majority of the respondents (> 80 percent) felt prepared to perform the different online journalism tasks, with most expressing confidence in their ability to use online tools for organizational problem-solving (85.3 percent), conduct journalism research online (84.4 percent) and observing ethical principles for online publishing (80.4 percent). Of the five different tasks, respondents expressed the least confidence in their preparedness to produce and share multimedia news stories (73.7 percent). While a paltry 7 percent felt unprepared to do online journalism tasks, 13 percent were not sure of their level of preparedness. While the findings align with evidence which stresses the need for students' to innovate with new media tools as an indicator of efficient usage of these tools (see Sutherland & Ho, 2017), they contradicted Bor's (2014) argument that 'digital natives' will most likely develop social media communications skills earlier than innovating with new media skills.

Characteristics of online journalism content taught

This variable focused on the online skills taught, the training emphasis and if content was consistent with industry needs. Table 2 shows the responses.

Construct	Indicator	Mean	STD
Skill variety	Most journalism modules include ICT issues	3.69	1.07
	We learnt multimedia content production	4.10	1.12
	We learnt professional social media usage	3.99	1.05
Theory vs practice	Modules were more practical than theoretical	4.11	1.04
	Some content was got from online sources	3.67	1.18
Relevance to industry	Content included examples from industry	3.92	1.02
	Content was updated with industry needs	3.73	1.18
	AVERAGE	**3.9**	**1.10**

Table 2: Mean responses for characteristics of training content

Generally, respondents felt that the online content taught gave them several skills, was more practical and industry-focused (M=3.9). The practicality of the multimedia production content and the regular integration of industry cases to enhance digital skills learning were particularly affirmed. FGD participants expressed learning online skills like creating blogs, using Joomla for web design, how to publish stories online, using Adobe InDesign to produce the online newspaper and producing stories for online broadcasts. In all FGDs, participants indicated skills in web design, social media tools like Twitter and blogs and online newspaper production as key focus of their online journalism training. In learning social media skills, however, some respondents cautioned some lecturers' assumptions that students' high social media exposure equated to professional ability to use them. For example:

> *"We know many people who are very rich because of using social media ...[but] we practically needed to learn how to [professionally] use them ...to make money" (Male participant, FGD1).*

> *'[...] I miss [skills] like how to create professional blogs and websites, although I can write and post stories" (Male participant, FGD5).*

Although the module descriptions indicated a more practical focus in teaching skills like photojournalism, website design and social media production, this sounded overambitious given comments from FGD participants who blamed technical and time limitations for adequate practice.

Online journalism training resources

This factor focused on the trainer competence, availability and appropriateness of the resources used in online journalism teaching. Table 3 shows the results.

Construct	Indicator	M	STDV
Resources quality and availability	Software and hardware resources are adequate	**3.53**	**1.118**
	There are manuals for multimedia production skills	**3.69**	**1.140**
	Internet connectivity is always reliable and available	**3.64**	**1.178**
	Internet is accessible at many sites at the campus	**4.22**	**0.958**
Trainer ability	Trainers are versed with most online media tools	**3.6**	**1.139**
Resources Variety	Mobile phones are used to teach multimedia skills	**4.13**	**1.013**
	Online tutorials improve our journalistic learning	**3.92**	**1.101**
AVERAGE		**3.82**	**1.092**

Table 3: Response rates for training resources

Articles

Participants generally affirmed the adequacy, accessibility and variety of the training resources (M=3.82). Internet was considered accessible at different campuses, allowing students easy usage to access library resources and online tutorials. In addition, most students judged the trainers as competent and updated on different online skills. These findings corroborated with the module descriptions, where the centrality of training resources like computer labs, studios and, to some extent, mobile phones was emphasized in the delivery of the online modules. Mobile phone use in multimedia production was particularly praised for facilitating the skills acquisition:

> '[...] mobile phone has really helped us [...] producing stories for online [platforms] looks easy now' (Female participant, FGD1).

> '[...] after learning how to capture and edit stories with phones, it is like the problems of few video cameras is being solved [...] we can produce stories from any location now' (Male participant, FGD3).

While many participants lauded the mobile phone for digital production, reservations were raised on associated Internet costs and some editors' reluctance to accept stories from a mobile phone. This notwithstanding, scholars argue that mobile phones are cheaper alternatives and offer journalism students' unfettered access to digital resources that facilitate digital learning in and out of class contexts (Steensen, 2011;Switzer and Switzer, 2013).

Students' online habits

Online habits have been associated with professional learning (see Robinson, 2013). This study operationalized these habits as the user exposure and behavior with online tools, roles (consumer or prosumer) and eagerness to remain updated with online skills, as summarised on Table 4.

Construct	Indicator	M	STD
Online audience	I create and post new stories, images, etc. on my networks	4.36	0.84
Engagement	I often read other people's posts without giving feedback	3.76	1.17
	I create and update groups on my social media networks	3.57	1.39
Online accounts	I regularly use my social media tools to get news updates	4.59	0.60
usage	I regularly follow other media professionals online	4.43	0.82
Online accounts	I have several active online media accounts	3.01	1.33
Ownership	I always explore new online tools and skills to learn	3.45	1.19
	AVERAGE	**3.88**	**1.05**

Table 4: Response rates for online media habits

With a mean score of around 3.9, the respondents demonstrated an active online behavior, with their use of different social media tools to get news and regular following of favourite media professionals being prominent. Respondents also actively created and posted stories and images/videos to their online audiences, exhibiting a 'prosumer' behavior characterized by a dual role of producing and consuming news stories (see Daniels, 2012). Of the online habits explored, the respondents' tendency to keep several online accounts active obtained the least affirmation (M=3.01), possibly on account of the amount of time it would require to have all active and updated. Despite this, majority of the respondents expressed their keenness to explore new online skills as they emerge.

The results resonated with scholarly opinion that people's participation on social networking sites provide them with both quick sources of information and learning spaces for new story-telling techniques (e.g. Deng & Tavares, 2015). The respondents' prosumer behaviour supports evidence that associates active online habits with self-teaching as users experiment and discover new skills with different online sites (Aifan, 2015). Some FGD participants attested to online skills gained through their day-to-day engagement with online colleagues:

> "[...] I use internet a lot for searching the news and ....trending topics [...] In this way I update myself. I think I have gained good [journalism] skills" (Male participant, FGD1).

> *"For me I think social media are like addiction …Since I always visit my social media it is easy to do many tasks with them" (Female participant, FGD4).*

Despite the benefits of such habits, some participants feared inadvertently 'creating wrong online image because once you post bad messages, they cannot be changed' (Female participant, FGD2). Others cautioned the futility of good online habits without basic professional skills: 'even with many online media activities, if you lack enough journalism writing skills, it may not help' (Male participant, FGD5).

Although module descriptions did not expressly indicate students' online behavior as part of the module delivery, some modules indicated students would practice much on their own, alluding to the self-teaching nature of most online tools. On the whole, the results were consistent with studies that relate personal use of online media tools with direct and indirect digital learning (e.g. Deng & Tavares, 2015).

Industry experiences

The focus here was on industry exposure through internships, class cases drawn from industry and contacts with practitioners. Table 5 shows the response mean scores.

Construct	Indicator	M	STD
Skills gained from industry	I was exposed to different online tools in my fieldwork	4.07	1.298
	I learnt to produce online news	3.38	1.289
	I learnt to cover live events using online tools	3.45	1.476
Contributions to industry	I developed social media accounts for organizations	2.72	1.441
	I contributed stories to online news media	3.43	1.172
	We did online productions for the industry	3.47	1.093
Professional Contacts	I participated in producing our e-newspaper, online radio.	3.11	1.459
	Works of other professionals improve my online skills	4.34	0.797
	AVERAGE	**3.5**	**1.253**

Table 5: Response rates for industry experiences

Findings showed that students gained work-related experiences as they were exposed to out-of-class assignments. On average, online skills gained from fieldwork including making contact with professionals (M=4.34) largely contributed to this digital experience. Industrial training had equipped students with skills to produce news stories and social media coverage of live events. This online coverage was considered instrumental in demonstrating the 'professional' usage of such tools in actual events (see Jeanti, 2015). Most respondents also contributed news stories to online news media and produced useful content for the industry (e.g. websites). This potentially improved their online news writing self-efficacy. The respondents expressed the least exposure to helping organizations develop and maintain social media accounts (M=2.72), revealing a gap in their ability to promote the use of online tools for organizational branding, crucial in organizational competitiveness. Consistent with scholarly journalism's critical role in preparing students for the industry (see Njuguna & Jjuuko, 2019), respondents affirmed the experience gained from participating in the development of the school online newspapers, suggesting they had a 'feel of the industry' as future practitioners. This value of 'real-world' experiences in developing professional competence is underscored in Bandura's (1994) self-efficacy theory where successful performance of a given task is predicated on people's mastery of skills through direct experience or observation. For example, by participating in online productions, respondents developed self-efficacy for such online journalism tasks upon graduation, as one participant noted:

> *"I have done a website at my place of internship Ni Nyampinga…so I am ready…I learnt this skill when I started doing volunteer work in different organizations during my holidays" (female participant, FGD5).*

> *Another experienced 'live' use of social media networks like Twitter, Facebook and WhatsApp during talk shows where we could interact with audiences through their comments". (Male participant, FGD1)*

These observations pointed to possible direct relationships between pre-employment digital experiences and performance with these online tools after graduation. Opinions by FGD participants coincided with the survey results where most respondents affirmed their work-related online experiences as critical drivers of their industry preparedness.

Articles

Attitudes to online tools for professional development

Attitudes were assessed on the respondents' beliefs in online media tools as catalysts of their future employment; feelings about online tools vis-a-vis their professional survival and intention to adopt these tools for professional growth. The mean response scores are shown in Table 6.

Construct	Indicator	M	STD
Beliefs regarding online tools	Knowledge of online tools can get me employed	4.62	0.65
	Online tools can teach me new skills for my future job	4.71	0.48
	My future work depends on knowledge of online tools	4.26	0.98
Feelings about using online tools	Online tools lower my ability to write professionally	3.75	1.17
	The media industry depends on new media to survive	3.99	0.97
	Online tools are not always trusted information sources	3.43	1.23
Behaviors or intentions with online tools	I use online tools to improve my interaction skills	4.49	0.65
	I have several online accounts to keep myself updated	4.57	0.66
	I always sign up to new social networking sites	4.22	1.12
	AVERAGE	**4.2**	**0.90**

Table 5: Attitudes to online tools for professional development

Results indicated that respondents positively perceived online tools as drivers of professional performance in the industry (M=4.2). They strongly believed in online tools as instruments of teaching important professional skills (M=4.71) and felt that good knowledge of such tools improved their chances of future employment (M=4.62). The respondents' beliefs regarding the online tools for professional developed seemed to match their behavior of deliberately using the tools to improve their interaction skills, having several online accounts for news updates and exploring emerging tools, possibly to learn new skills. This is consistent with studies like Iyer's (2015) where future professionals are expected to demonstrate active interest in emerging technologies, to fit in the fast-changing industry. It was evident that both beliefs and action indicators enjoyed mean scores of >4.0. Although the respondents generally felt positive about these online tools, concern was raised on their negative effect on their journalistic writing skills (as noted by Hodgson & Wong, 2011) and the risk of some online tools not being trusted news sources - a challenge shared by scholars like Kwanya (2014).

In sum, the respondents' high mean attitude scores portrayed online tools as critical to their future careers. Module descriptions also showed that such tools were integral to the content taught. In addition, all online journalism modules carried the maximum number of credits (20), further indicating a strong emphasis on digital skills in the program. These findings align with studies that associate technology attitudes and self-efficacy for digital skills (see Rosen et al, 2013). Results also underscore the relevance of Davis' (1989) technology acceptance model – where attitudinal aspects such as perceived ease of use and benefits of using a technology are key to beliefs or confidence in the successful use of the technology. With a technologically-driven media industry, respondents asserted the need for persistence:

> *"We cannot avoid it ...we have to try and keep ahead by discovering many things about what is happening in social media" (Female participant, FGD2).*

Inferential analysis of survey results

Correlation analysis between the selected digital skills development factors and the students' online journalism preparedness showed that levels of interdependence ranged from weak to strong, at 95 percent confidence level. Table 7 shows this correlation matrix.

It was evident that while industry experiences strongly and significantly correlated with the students' online journalism preparedness (r=.527, p-value .000), correlations with characteristics of the training content, training resources and attitudes towards online tools correlated were moderate though significant.

Students' online habits exhibited the weakest yet significant correlation with their online preparedness. With majority respondents citing online skills gained through fieldwork, such industry experiences were key

		Training Content	Training Resources	Online Habits	Work Experience	Online Attitudes	OJP
Online Journalism Preparedness (OJP)	Pearson Correlation	.450**	.496**	.270**	.527**	.413**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).							

Table 7: Correlations between selected factors and online journalism preparedness

to their preparedness. Although students' online behavior has been associated with incidental professional learning, evidence suggests that this 'digital culture' among most youth may only relate to online social interactions with no innovative learning intended (Daniels, 2012). Therefore, the learning effects of online media habits may not be generalized among all students, as evident in this study.

Although study results confirm that appropriate training content and resources are key in preparing students for the industry (e.g. Switzer and Switzer, 2013), FGD results pointed to a possible disconnect between the schools' fairly connected multimedia facilities and actual usage by students. One participant noted the 'limited time to practice even with an equipped computer lab' (Male participant, FGD1). Another complained about machine-student ratio: '[…] we are too many students in a small lab […] only a few do the practice as others follow in theory' (Female participant, FGD5).

Regression analyses results showed that industry experiences explained the greatest variance in students' online journalism preparedness (27.8 percent). This was followed by training resources (24.6 percent), training content (20.3 percent), attitudes regarding online tools (17 percent) and students' online media habits (7.3 percent), when each factor was assessed on its own in the model. The goodness-of-fit models for each factor were found statistically significant at 5 percent, with ANOVA results indicating significant relationships between the factors and students' online journalism preparedness thus: characteristics of the training content [$F_{(1,142}=35.356$, p-value<0.000)], training resources [$F_{(1,142}=45.255$, p-value<0.000)], online media habits [$F_{(1,142}=10.955$, p-value<0.001)], industry experiences [$F_{(1,142}=53.426$, p-value<0.000)] and attitudes to online tools for professional development [$F_{(1,142}=28.510$), p-value<0.000)]. With all the models being statistically significant at <0.05, each factor demonstrated its reliability to predict students' online journalism preparedness.

The tests of significance of the regression of the factors with the students' online journalism preparedness revealed positive significant relationships with students' online journalism preparedness as follows: characteristics of training content (β=0.416, t=5.946, p-value <0.000), training resources (β=0.380, t=6.727, p-value <0.000), online media habits (β=0.332, t=3.310, p-value <0.001), industry experiences (β=0.411, t=7.309, p-value <0.000) and attitudes towards online tools for professional development (β=0.507, t=5.339, p-value <0.000). The observed positive linear relationships implied that a unit improvement in the characteristics of training content, training resources, online media habits, industry experiences and attitudes towards online tools was predicted to increase the probability of the students' online journalism preparedness by 41.6 percent, 38 percent, 33.2 percent, 41.1 percent and 50.7 percent respectively, keeping all other factors constant.

With the p-values of <0.05 in all factors, the null hypotheses were rejected with a conclusion that each of these factors exerted a significant and positive influence on the students' online journalism preparedness. These findings concur with empirical evidence that failure to adapt the journalism training to the required digital age content and skills is bound to expose programs to possible failure and therefore, negatively affect careers of graduates especially in the digitally-oriented industry (Robinson, 2013). The role of resources in digital skills development cannot be gainsaid. For example, in journalism education context, the link between digital training resources and online self-efficacy is exemplified in studies that emphasize the right mix of resources to enhance online story-telling experiences of the future professionals (e.g. Bor, 2014).

The role of online habits in 'teaching' professional lessons to users, for example, by gaining online communication skills (see Stoker, 2015) is evident from the study results. With most students considering online platforms as second nature to their lives, Switzer and Switzer (2013) argue that this 'tech-savvy' generation is gradually socialized into a techno-culture with attendant personal and professional benefits. With the study results showing the significance of work experiences in the journalism students' digital learning, the

Articles

positive relationship between attitudes to online tools for professional development and the online journalism preparedness of the respondents cohere with previous studies (see Hodgson & Wong, 2011) which found a relationship between students' perceptions of technology and their digital skills development.

An assessment of the joint influence of the factors on the students' online journalism preparedness showed the overall model had a 0.455 degree of association between these factors and students' online journalism preparedness, implying that the factors collectively explained 45.5 percent of the students' online journalism preparedness. Moreover, ANOVA results indicated the overall model was significant i.e. (F-statistic of 22.552 (5, 138) and p-value 0.000<0.05), confirming the factors' joint significant and positive influence on the students' online journalism preparedness. Thus the overall model predicated as $Y = \beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \varepsilon$ to investigate the link between the factors and the students' online journalism preparedness was a good fit for regression analysis. When all variables were fitted on the overall model, industry experiences had the most positive and significant influence on the students' online journalism preparedness (B=.258, p-value 0.000) followed by training resources (B=.178, p-value .003) and attitudes to online tools (B=.255, p-value 0.003). While the students' online media habits and the characteristics of the training content were positively related with students' online journalism preparedness (i.e. B=.136, p-value .096 and B=.104, p-value 0.156, respectively), their levels of significance in the overall model were >0.05, therefore insignificant.

In the overall model, the null hypothesis test revealed positive relationships of varying statistical significance between the selected factors and students' online journalism preparedness as follows: characteristics of training content (t=1.427; p=0.156>0.05), digital training resources (t=2.987; p=0.003<0.05), online media habits (t=1.676; p=0.096>0.05), industry experiences (t=4.658; p=0.000<0.05) and attitudes towards online tools for professional development (t=3.038; p=0.003<0.05). The null hypotheses regarding the characteristics of training content and students' online media habits were accepted since these factors had positive but statistically insignificant relationship with students' online journalism preparedness. On the other hand, null hypotheses regarding training resources, industry experiences and attitudes to online tools were rejected on account of their significant and positive relationships with students' online journalism preparedness.

Conclusion

This study contributes to current debate regarding effective journalism education for the digital age. By exploring the role of training content, resources, online habits, industry experiences and attitudes to online tools in students' confidence to work online, the study findings affirm these factors as critical in preparing 'online-ready' media professionals. Although scholars like Deng & Tavares (2015) caution against equating online habits to 'professional' habits, incidental learning is possible, as evident in this study. Encouraging students to 'be constantly online' may, therefore, boost their confidence to execute certain professional tasks with time.

With industry experiences, training resources and online attitudes highly associated with the respondents' online preparedness, the need for journalism schools to leverage academia-industry linkages and the right attitudes towards online tools to authenticate the future professionals' industry readiness becomes clear. With digital skills learning being a gradual process, students may need to maintain active online identities right from their first year of study, while journalism schools structure digital skills training in cognizance of practice time against huge student numbers.

To enrich findings in this study, future research could involve more objective online journalism preparedness measures (e.g. practical assignments) to remove the bias of self-assessments. In addition, the mediating role of such factors as gender, digital capital and online mastery orientation (associated with online behavior) in the students' online journalism preparedness might give deeper insights, especially as only about 46% of the variations in the students' online journalism preparedness were explained by the study factors.

References

Aifan, Hanan Ahmad. (2015) Saudi students' attitudes toward using social media to support learning. Unpublished Phd thesis, University of Kansas.

Bandura, Albert. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, Albert. (1994). Perceived Self-Efficacy in Cognitive Development and Functioning. Educational Psychologist, 28(2), 117-148.

Becker, Lee, Vlad, Tudor and Kalpen, Konrad. (2012). Annual survey of mass communication enrolments: enrolments decline for second year in a row. Journalism & Mass Communication Educator, 67(4), 333–361. https://doi.org/10.1177/1077695814555432 .

Bor, Stephanie. (2014). Teaching social media journalism: Challenges and opportunities for future curriculum design. Journalism & Mass Communication Educator, 69, 243–255.

Daniels, Stephanie. (2012) Young journalists today: journalism students' perceptions of the ever-evolving industry. Unpublished MA thesis, University of North Texas.

Davis, Fred. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS Quarterly, 13(3), 319–339.

Deng, Liping and Tavares, Nicole. (2015) Exploring university students' use of technologies beyond the formal learning context: A tale of two online platforms. Australasian Journal of Educational Technology, 31(3), 313-327.

Diddi, Arvind and LaRose, Robert. (2006). Getting Hooked on News: Uses and Gratifications and the Formation of News Habits Among College Students in an Internet Environment, Journal of Broadcasting & Electronic Media, 50, 193-210. https://doi.org/10.1207/s15506878jobem5002_2

Faizan, Riffat and Zehra, Nasreen. (2016). Quality work-life as predictor to organisational commitment under contrasting leadership styles: I.T responses from Pakistan's private software houses. Global Journal of Management and Administration, 16(6), 9–23.

Ferrari, Anusca. (2012). Digital competence in practice: An analysis of frameworks. JRC Technical Reports. European Union: Institute for Prospective Technological Studies.

Flores, Francisco. (2010) Convergence in Journalism: implications for the higher education of journalism students. Unpublished Phd Dissertation.

Gugerty, Catherine. (2011). Internships in Public Relations and Advertising: The nature of the experience from the student's perspective. Unpublished Master's thesis, University of South Florida.

Hamzah, Azizah and Mustafa, Siti. (2014). Digital Readiness of Malaysian Journalists. Advances in Journalism and Communication, 2, 58-67.

Hodgson, Paula and Wong, Dora. (2011) Developing professional skills in journalism through blogs. Assessment & Evaluation in Higher Education, 36, 197–211.

Iyer, Padmanabhan. (2015). Competencies for future newsrooms in Australia: a mid-career learning strategy for journalists. Unpublished Phd Thesis, University of Wollongong, Australia.

Jeanti, St Clair. (2015). Doing it for Real: Designing Experiential Journalism Curricula that Prepare Students for the New and Uncertain World of Journalism Work. Coolabah, No.16.

Kanigel, Rachele. (2014). Course remix: meshing reporting skills and multimedia storytelling, EducationShift.

Kolb, David. (1984). Experiential Learning: experience as the source of learning and development. Englewood Cliffs, NJ: Prentice Hall.

Kwanya, Tom (2014). Effectiveness of ICT Education in Schools of Journalism in Kenya. Journal of Mass Communication and Journalism, 4, 221.

Lewis, Seth. (2010). Journalism innovation and the ethic of participation: The case of the Knight Foundation and its News Challenge (doctoral dissertation). University of Texas at Austin, Austin, TX.

Marinho, Sandra and Pinto, Manuel. (2006). 'Does journalism education make a difference?'Paper delivered to the Professional Education Section of the Scientific Conference of the International Association for Media Communication Research , Cairo (Egypt), 22 to 28 July.

Articles

Media High Council (MHC). 2014. Media Business Growth with Capacity Needs Assessment.

Available at http://www.igihe.com/IMG/pdf/media_business_growth-final_report_may_14_4_.pdf .Accessed11 December 2020.

Nistor, Cristina. (2015) Journalism education and professional practices - transnational network

for the integrated management of post-doctoral research in the field of Science Communication (CommScie)' contract no. POSDRU/89/1.5/S/63663.

Njuguna, Joseph and Jjuuko, Margaret. (2019). Online journalism education in Rwanda: students

find value in the experiential learning approach. *Scholarship of Teaching and Learning in the South*, 3(2), 84-101.

Onwuegbuzie, Anthony and Collins, Kathreen. (2007). A typology of mixed methods sampling

designs in social science research. Qualitative Report, 12, 281–316. Retrieved November 22, 2020, from http://www.nova.edu/ssss/QR/QR12-2/onwuegbuzie2.pdf.

Robinson, Sue. (2013). Teaching journalism as process: A proposed paradigm for J-School

curricula in the digital age. Teaching Journalism and Mass Communication, 3(1), 1–

12.

Rosen, Whaling, Carrier, Cheever and Rokkum. (2013). The media and technology usage and

attitudes scale: an empirical investigation. Computers in Human Behavior, 29(6), 2501-2511.

Rwanda Governance Board (2018). Rwanda Media Barometer Report. Kigali, Rwanda.

Available at: http://rgb.rw/media-development/media-sector-development/

Accessed 11 December 2020.

Sagrista, Maria and Matbob, Patrick. (2016). The digital divide in Papua New Guinea:

Implications for journalism education. Pacific Journalism Review, 22(2):20-34.

Seelig, Michelle. (2010). Journalism and Mass Communication Education: The Impact of

Technology on Pedagogy. Exploration in Media Ecology. Hampton Press Inc. and MEA, 245-258.

Spyridou, LiaPaschalia and Veglis, Andreas. (2008). The contribution of online news

consumption by journalism professionals: likelihood patterns among Greek journalism students. Journalism, 9(1), 52-75.

Steensen, Steen. (2011). Online Journalism and the Promises of New Technology: a critical

review and look ahead. Journalism Studies, 12 (3), 311-327.

Stoker, Ruth. (2015). An investigation into blogging as an opportunity for work-integrated

learning for journalism students. Higher Education, Skills and Work-Based Learning, 5(2), 168-180.

Su-I, Hou. (2017) Measuring social media active level and engagement level among

professionals in higher education. International Journal of Cyber Society and Education, 10(1), 1-16. https://doi.org/10.7903/ijcse.1520

Sutherland, Karen and Ho, Susie. (2017). Undergraduate perceptions of social media proficiency

and graduate employability: a pilot study. Higher Education, Skills and Work-Based Learning, 7(3), 261-274.

Switzer, Jamie and Switzer, Ralph. (2013). The myth of the tech-Savvy Student: the role of

media educators in a Web 2.0. World Journal of Media Education, 4(4).

Wotkyns, Kip. (2014) Curriculum Development in the Digital Age of Journalism. GSTF Journal

on Media & Communications, (2)1.

Yamane, Taro. (1967). Statistics: An introductory analysis, 2nd edition: New York. Harper and

Row.

Articles