

Digital Development and Technology in Sport: A Course to Improve Digital Literacy in the Sport Management Curriculum

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In today's technology-driven society, it is vital for students to be well prepared in digital competency when entering the workforce. More than ever, employers are seeking students with a clear understanding of digital literacy, especially in the sport management industry where the workforce has been quick to evolve and engage with new digital media platforms (Pedersen et al., 2021). The term "digital literacy" has multiple definitions, but in the context of this paper, the definition is the set of skills used to develop knowledge and communicate that knowledge with confidence to achieve objectives in the digital landscape (Buckingham, 2006; Lankshear et al., 2008). Simply said, digital literacy is knowledge of digital technologies. By contrast, the term "digital competency" ensures individuals not only know the technologies but can also use these skills to adapt to technological innovations and assess how to implement new technology as a whole (Québec Ministry of Higher Education, 2019). Some digital technology examples might include the development of websites, creating videos on streaming platforms, or creative graphic design outputs for use in social media marketing. Regarding the sport management field, digital competencies include knowledge and ability to manage and present data, design a web presence, articulate visual media and media publications, and create video content to a sport audience.

Historically, higher education has been slow in its response to new technology trends and has lacked focus on digital literacy in the classroom (Gallagher & Palmer, 2020; Moore, 2017). For example, Gallagher and Palmer (2020) report that only around 5% of college budgets are dedicated to information technology spending. This demonstrates a lack of commitment from universities to adapt to the ever-changing technology industry. As the National Association of Colleges and Employers argues, a commitment to engage students with information, training, and/or resources pertaining to digital platforms may be essential moving forward (National Association of Colleges and Employers, 2018). To commit to this type of change, sport management programs should provide resources for students to assist in the development of digital competence to prepare students for the workplace. The authors suggest one potential solution to improving digital literacy among sport management students is offering a semester-long course solely focused on digital literacy and skill development related to the sport sector. Cannon and Potter (2019) suggested, "it is undeniable that the visual forms of media are the predominant mode of communication in the 21st century" (p. 26), demonstrating the need for digital literacy incorporation into academic curriculum

to assist students entering the sport industry workforce. To address this in the sport management field, this paper discusses the implementation of a digital development course with a specific goal of enhancing students' digital skill development and ability to gain valuable digital competencies for future coursework and employment in sport.

Review of Literature

The term "digital literacy" was first introduced in 1997 by Paul Gilster, who indicated that digital literacy provides the basic thinking skills and core competencies necessary for success in interactive digital environments. Digital literacy provides a fundamental opportunity to use resources, tools, and services to enhance interactive learning (Gilster, 1997). The digital technology field has changed significantly over time and so has the expectation of digital literacy and competency skill sets in the workplace. In the digital landscape, the evolution has gone from a general understanding of information (Zurkowski, 1974), to being literate on the computer (Gilster, 1997; Tsai & Hebert, 2002), and to the ability to use, apply, and access internet knowledge in a literate way (Harrison, 2017). These changes to the evolution and understanding of digital literacy and knowledge provide a need for greater understanding of how and when people can gain these skills.

The current college student has been exposed to a variety of digital knowledge, skills, and various platforms in the classroom setting. However, many students still lack the essential knowledge to implement these skills, potentially hindering their transition into the sport workplace (Meyers et al., 2013; Miragaia & Soares, 2017; Nelson et al., 2011; Sibson & Morgan, 2022; Sivrikaya, 2020). In the context of the sport industry, most research on digital literacy exists in the areas of sport media, journalism, and social media (Fortuna, 2015; Lebel et al., 2015). More recently, Sivrikaya (2020) investigated the digital knowledge capacity in the sport science field, finding that students in sport fields struggled to demonstrate confidence in their digital literacy. While O'Beirne (2018) notes, the ever-changing sport marketing standards require technological understanding for content and service delivery (O'Beirne, 2018). However, few have reviewed digital literacy content in the sport management curriculum. The need for digital literacy among outgoing college students is clear, but little is understood about how the learning of various digital competencies (data management, data presentation, web presence, visual media, media publications, and video media) can be done within the sport management classroom.

Generally, in higher education, the need for improved engagement regarding student's digital literacy has been acknowledged (Burton et al., 2015; Gallagher & Palmer, 2020). Administrators

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and educators alike have begun to diversify curriculum to include specific digital media assignments and activities. In theory, students who engage with varying digital media assignments and platforms across the curriculum will experience improved digital competencies and skills. According to Sibson and Morgan (2022), “due to the ubiquity of digital technologies throughout the sport industry, it is essential that sport management graduates are adequately equipped with digital competencies” (p. 12). However, while adoption across the curriculum can improve digital literacy skills, more advanced digital platforms (e.g., Adobe Photoshop, InDesign, etc.) require significant learning curves to acquire adequate digital understanding and competence (Chang, 2018). Giving credence to the argument that a full semester-long course will give sport management students the ability to improve their digital literacy and competency.

Digital Competency Framework

This study used the digital competency framework introduced by the Québec Ministry of Higher Education (2019) to better understand the general characteristics of digital literacy and competency skills. This framework was originally introduced to integrate digital technology into professional and academic organizations; through this lens, we can better understand the integration of 21st century digital literacy skills into the higher education space. As Iskandar et al. (2022) suggest, “Digital literacy is a cross-curricular competency in the sense that the skills are not fixed to one subject and not context-bound” (p. 80). With the limited ability to measure the quality of learners’ work in digital environments, the authors used portions of the digital competency framework to develop critical thinking skills, provide space for innovation and creativity, and harness digital resources for learning (Québec Ministry of Higher Education, 2019). In addition, this framework offered a pedagogical guide for the development of the course content (see Appendix A).

Objectives

At a large research university located in the Midwest, the sport management program has committed substantial resources to providing a three-credit course focused on digital competency development, with the goal of improving the digital literacy of students. This course introduced students to multiple digital platforms (Microsoft Office and Adobe Suite), with a focus on competencies associated with data management, data presentation, web presence, visual media, media publications, and video media. The students in this class were challenged to provide sport-specific media outputs with an emphasis on skill development, uniqueness, and creativity. Furthermore, students were involved in learning conversations, to provide feedback to others through evaluative praise or constructive feedback. This was an important layered learning approach to assist students in the development of the content deliverables to a sport audience. This was a critical component of the course design to achieve the applicability of digital literacy content.

The addition of this course into the curriculum is timely, as the Commission on Sport Management Accreditation (COSMA) does not specifically address the needs of student learning regarding digital literacy (COSMA, 2022). While specific language surrounding core curriculum is included,¹ information on “technological advances” is vague. The requirements simply state, “Technological advances—Technological advancements such as

communication platforms, social media, web streaming, instant replay for officials, injury rehabilitation and social media in addition to uses of technology in the classroom to enhance and stimulate learning” (COSMA, 2022, p. 19). While the uses of technology in the classroom are emphasized, a lack of depth concerning the actual applicability toward digital literacy is arguably missing. Thus, literature surrounding best practices to implement such a class in the sport management field is limited. The course was designed to introduce sport management students to digital technologies and platforms to help increase digital literacy and competency levels while also addressing the need for discovery and critical thinking in the design of engaging others in content.

Methods

To best address the digital literacy needs of the sport industry, a course was created with guidance from the 12 dimensions of the *digital competency framework* emphasizing digital literacy competency with an undergraduate population of students. As mentioned prior, there are two avenues to add value to students’ digital development: (a) providing multiple diverse assignments and projects throughout the curriculum with measurable outputs and (b) creating a semester-long course (three credits) solely focused on digital development in sport. While the first option does provide students a unique learning environment, a recent survey from Adobe found the learning curve for present-day digital platforms has become time consuming, making it potentially challenging to veer away from course instruction to introduce new technology in traditional classrooms (Chang, 2018). Thus, the second option highlighted above, a semester-long course (three credits), was implemented to allow students a space to learn, ask questions, and be challenged in their digital development, across a variety of digital platforms.

During the development of this lecture and project-based learning course, faculty engaged in multiple conversations with sport industry professionals working in digital technology positions (e.g., graphic designer, creative communications, photographer, and videographer) to better understand their positions and role responsibilities to inform the material for this course. Through these informal conversations and by using the guidance from the 12 dimensions of the *digital competency framework*, a curriculum was developed to offer basic digital development skills that support work in the sport industry. For example, several industry professionals indicated using multiple digital products in their day-to-day work, suggesting a need for entry-level job candidates to understand basic digital literacy across core digital platforms (Microsoft: PowerPoint and Excel; Adobe: Photoshop, InDesign, and Premiere Pro). The development of this course content focused on exposing students to several identified sport industry-preferred digital tools and the use of those for engagement.

The course also focused on creating specific digital literacy skills among the identified platforms. For example, the course outlined the key learning objectives as use and processing of data, data presentation, web presence (social media), visual media, media publications, and video media presentation. In addition, students were expected to critique themselves and others to stimulate critical expression and engaged learning. Building in these course objectives allowed students to further develop their digital literacy skills, while also providing an environment of critical thought across each assignment/platform. Requiring students to recognize and in turn utilize multiple sport content examples throughout the semester allowed for students to give feedback

and assist in the development of a creative process. In practice, for example, students created a video media assignment, offering a promotional video for a new sport organization (they create their own team throughout the semester). For this assignment, students were asked to write and implement an entire script and storyboard with an evaluation component, overlapping their digital literacy skills (Premiere Pro) with creativity and critical thinking.

Classroom Content Development

The digital literacy course was a 16-week course which followed a 2-week module schedule, allowing multiple digital platforms to be covered throughout the semester (see Table 1 for course schedule example). During the first week of the module, students were introduced to fundamental core competencies of the digital platform, including skill development and implementation. To further assist in student understanding, each module included LinkedIn Learning videos. These videos offered additional content knowledge to build on the coursework covered in the class. In addition, this also provided student-specific outputs (badges) which acted as tangible materials for students to demonstrate their digital development to employers. The second week of module content focused on applying the skills learned toward real-world digital outputs. For example, during Week 2, students are shown an industry example, leading to discussions surrounding its strengths and weaknesses. To assist in their development, as a group they break down the specific tools used and skills needed to develop said graphic and then students were tasked to recreate the industry example to improve or elevate it. This process was used to help students in the creative process, often one of the biggest hurdles in student digital literacy development, but vital to working in the sport industry.

Digital Assignments

The semester-long final project for this course was centered on students creating their own sport team, with a specific focus on creating the team's digital footprint. This digital footprint included press releases, event announcements, sponsorship presentations, mock team drafts, social media posts, printed posters, media guides, logo design, and team videos. All assignments associated with this course aligned with the final project, allowing students to work on their material throughout the semester. In total, the final project required eight separate submissions, one from each module covered in the course. For example, during the Adobe Cloud Express module, the assignment asked students to submit three social media posts (Instagram, Twitter, and Facebook), with the final submission at the end of the semester requiring six total social

media posts. This process allowed faculty to give critical feedback to students regarding assignment submissions, thus creating a learning environment focused on constructive feedback to enhance the development of digital skills and allow for creative outputs.

To properly grade these assignments, the faculty relied on the expertise of campus resources, such as the teaching center and the digital media suite. The teaching center's mission on the identified campus is to properly assist in the development of course material and rubrics, while the digital media suite provided digital development resources to both faculty and students. Relying on these campus resources and assistance was critical in the development of rubrics focused on application knowledge and skill, critical thinking (design elements), project message (clarity), and work history. Overall, the rubrics for this course were built on application of tools covered in class and students' creative design. (The general rubric adopted across Adobe modules can be found in [Appendix B](#)).

Discussion

The purpose of the digital literacy course was to educate and develop sport management students' digital literacy across a multitude of platforms. As mentioned, the sport management curriculum has been slow in their adoption toward the digital media revolution in sport ([COSMA, 2022](#); [Sibson & Morgan, 2022](#)). However, this course addresses this issue by specifically adopting curriculum focused on developing digital literacy (knowledge) and competency (skills) for students. It is important to note that there are multiple ways to implement digital literacy objectives into course curriculum in sport management. This course was solely focused on introducing students to digital platforms in hopes to better prepare them for the ever-evolving needs of the digital landscape in the sport industry. While the authors identify adopting digital competencies across multiple courses in the curriculum can be useful (e.g., sport marketing: Photoshop), it is suggested that an introductory course, as discussed here, can greatly improve digital competencies and develop student understanding of the sport workplace needs. As mentioned, based on the significant learning curve associated with digital platforms ([Chang, 2018](#)), a three-credit-hour course dedicated to this topic is suggested.

Students in this course demonstrated a better understanding of the digital media landscape which in turn translated to confidence and comfort with the platforms covered in the course. This was exhibited through submissions with improved creative design aspects from the beginning of the semester to the final project. Further, an interesting outcome of this course was the skill development demonstrated by students who had previously been

Table 1 Course Schedule Example

	Digital platform	Objectives
Module 1: Weeks 1 and 2	Microsoft Word	Document prep and formatting
Module 2: Weeks 3 and 4	Microsoft PowerPoint	Digital presentation
Module 3: Weeks 5 and 6	Microsoft Excel	Data management
Module 4: Weeks 7 and 8	Adobe Cloud Express	Web presence (social media)
Module 5: Weeks 9 and 10	Adobe Photoshop	Visual media
Module 6: Weeks 11 and 12	Adobe Illustrator	Visual creation (logo design)
Module 7: Weeks 13 and 14	Adobe InDesign	Visual formatting and publications
Module 8: Weeks 15 and 16	Adobe Premiere Pro	Video media

exposed to various digital platforms (e.g., PowerPoint, Excel, and Photoshop). For example, when students expressed some level of exposure prior to class, they significantly outperformed their peers throughout the course. This may imply that the more students are exposed to and given assignments in various digital platforms, a greater sense of confidence they express. This alone gives more credence to the above argument that to best embed digital assignments across a sport management curriculum, students should first take a similar course to increase their confidence as well as skill in the digital space.

Additionally, those developing sport management curriculum should also consider a higher-level course to further assist students in digital skill development to excel and secure positions in digital media in sport. For example, the digital platforms covered in this course, especially the Adobe products, are in-depth and require significant time to learn (heightened learning curve). Therefore, to set sport management students apart, and make them marketable candidates for media-specific sport industry positions, programs may benefit from adding several additional courses focused on developing a more extensive in-depth knowledge base across more advanced digital products.

While the addition of a course focused on digital development certainly has its upsides, constraints also exist in adopting this type of course, especially with a lack of faculty expertise on digital development. Specific data are unknown regarding faculty teaching expertise within the sport management field. It could be argued the lack of course offerings from sport management programs might suggest an absence of qualified sport management faculty in digital design capacities. As such, two fundamental ways for programs to adopt this class would be through utilizing adjunct faculty (athletic department, industry professionals, etc.) and having programs invest in Adobe or other digital training programs and workshops for interested faculty to grow their own digital development skills.

Overall, this article aims to inform and encourage sport management programs across the country to address the lack of digital skills present in sport management curriculum and encourage the adoption of specific courses centered on digital literacy and competency development. The introduction of this course was found to successfully engage and challenge students to learn new digital media platforms and improve their digital literacy skills. Thus, the development and implementation of curriculum focused on digital literacy meet the needs of the industry and better prepare the next generation of sport management students.

Note

1. "Legal and risk management aspects—foundation of knowledge ranging from understanding day-to-day contracts for sports participation to multibillion-dollar contracts. Negligence, risk identification, mitigation, and constitutional protection" (COSMA, 2022, p. 19).

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Appendix A: Digital Competency Framework



Source. Québec Ministry of Higher Education (2019).

Appendix B: Final Project Rubric

	Clearly evident	Evident	Occasionally evident	Not evident
Application knowledge and skills	Student demonstrates <i>clarity</i> and <i>accuracy</i> while drawing the <i>connection</i> between the appropriate application skills and the situation. Student covers the <i>breadth</i> of knowledge and implements it in a comprehensive understanding of the uses of technology.	Student sometimes offers clarity and makes the connection between the appropriate application skills. Student covers most of the concepts and somewhat explains them, demonstrating a fairly good understanding of the technology use and practice.	Student has difficulty connecting appropriate application skills. Student covers few concepts or ideas and/or information and/or demonstrates inadequate understanding of the use of technology in sport.	Student does not grasp appropriate application skills. Student does not demonstrate an understanding of the technology.
Critical thinking and creative application	Student applies <i>relevant thinking</i> skills (e.g., comparing, contrasting, classifying, abstracting, analyzing, and criticizing) in presenting information. Student develops solutions by using all available and applicable information. Student demonstrates <i>precision</i> following creative design principles of digital media.	Student applies relevant thinking skills (e.g., comparing, contrasting, classifying, abstracting, analyzing, and criticizing) in presenting information with reference to context, assumptions, data, and evidence. Student somewhat follows the creative design principles of digital media.	Student applies relevant thinking skills (e.g., comparing, contrasting, classifying, abstracting, analyzing, and criticizing) in presenting information but without clear reference to context, assumptions, data, and evidence. Student offers vague use of creative design principles of digital media.	Student does not show development of a project based on available information or evidence. Student does not identify the key assumptions and/or evaluate the given information that underlies the issue.
Communication/project message	<i>The purpose</i> is clear throughout student work. The tone and message are appropriate to the intended audience.	The purpose is clear but not universally consistent. Irrelevant information occasionally appears. The tone and message are generally appropriate for the audience.	The work outlines the purpose, but it is not always consistent. There may be irrelevant information, and/or purpose is lost in the project. The tone may be inconsistent.	The purpose is unclear. The evidence and tone are inappropriate for the audience.
Work history	Student reports <i>clarity</i> in specific tools, edits, and adjustments made to their work to demonstrate their understanding of the application.	Student reports some clarity of the specific tools, edits, and adjustments made to their work to demonstrate their understanding of the application.	Student does not report the specific tools, edits, and adjustments made to their work to demonstrate their understanding of the application.	

Note. Applications applied to this rubric include Adobe Cloud Express, Photoshop, Illustrator, InDesign, and Premiere Pro.