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# Education Opportunities for the Aspiring Aquatic Professional: A Qualitative Analysis of Experience-Based Building Blocks for Success

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# SENIOR THESIS APPROVAL

This Honors thesis entitled  
**“Educational Opportunities for the Aspiring Aquatic Professional: A  
Qualitative Analysis of Experience-Based Building Blocks for Success”**  
written by  
**Hannah Hickman**

and submitted in partial fulfillment of the requirements for completion  
of the Carl Goodson Honors Program meets the criteria for acceptance  
and has been approved by the undersigned readers.

Chris Babb, thesis director

Dr. Rebecca Jones, second reader

Dr. Mike Reynolds, third reader

Dr. Barbara Pemberton, Honors Program director

Date

## **Abstract**

While recent growth in the aquatics industry requires professionals to be more skilled and knowledgeable than ever before, educational opportunities for students pursuing this career are limited. There is not an all-encompassing course or degree program titled, "How to be an Aquatic Professional." This study utilizes interviews from 10 aquatic professionals regarding their experiences and opinions on this topic to explore the need for promoting aquatics education to students and to help outline a series of building blocks that students could potentially take to pursue a career as an aquatic professional. It attempts to answer the question: How do educational opportunities for college students who want to pursue a career in the aquatics field compare with industry growth and is more education and/or outreach needed?

## **Introduction**

Aquatics is a growing industry that has become a viable option as a long-term career. This growth in the industry requires professionals to be more skilled and knowledgeable than ever before. There is a need for outreach to students to help them enter this industry as the new generation of aquatic professionals. Students who do not grow up in the industry typically do not realize that aquatics is a career option, and even students who have grown up around swimming pools and facilities may not consider pursuing long-term opportunities in the aquatics industry. Part of this perception may come from the lack of focus on aquatics in formal educational opportunities such as college degree programs, specifically within recreation paths. Even students who do know they want to be an aquatic professional have limited degree programs they can choose from that will provide education that is specific to the field of aquatics. Other educational opportunities that do provide industry-specific knowledge may not be sufficiently promoted to students. Increasing educational opportunities in formal degree programs and promoting existing industry education can help foster the recruitment of the new generation of

aquatic professionals. This study explores those needs and looks at specific educational “building blocks” that can benefit students who do want to pursue a career in the aquatics industry.

### **Motivation for Study**

When I decided that I wanted to be an aquatic professional, I found that there were not many opportunities in college degree programs that applied directly to aquatics. I am a Communications major with minors in Business and Recreation and Sports Administration. While many of these skills can be applicable to the aquatics industry, such as budgeting, program design, and professional communications, there is a lack of aquatics specific knowledge that is not covered in a typical college major. I would love to see more programs implement a bigger focus on aquatics. I completed coursework from the recreation and business programs that was beneficial and contained parallels that could be related into the aquatics industry, but found that the majority of recreation classes were geared towards the sports side of the field. I was able to pursue other routes of industry-specific education, such as attaining certifications, attending an industry conference, reading industry texts, and learning from mentors. Aquatics education has always been a passion of mine, and having the opportunity to attend the World Waterpark Association Symposium and Tradeshow - one of the biggest sources for aquatics industry education - increased my interest in the promotion of aquatics education even more. Thankfully, I have had mentors that steered me in the right direction in preparing for a career in the aquatics industry, but there is no real outline for “How to Be an Aquatic Professional.” In this study I hope to demonstrate the lack of aquatics focus in Recreation degree programs, illustrate the need to promote existing educational opportunities to students, and provide a potential outline of steps students can take to pursue a career as an aquatic professional.

## Background

Significant growth in the aquatics industry began in the 1940s with a surge in the construction of public swimming pools for the purpose of teaching people to swim. At the time, a crowded pool consisted of 50-100 swimmers (NRPA, 2017). Since then, the basic rectangular swimming pools of the 1960s have evolved into multimillion-dollar aquatic centers. Today, enticements include a variety of pool types, high-speed waterslides, surf machines, and more (Klingensmith, 2008). Over 300 million visits to aquatic centers take place in the US every year. Swimming is the most popular recreational activity for the ages of 7-17, and the fourth most popular recreational activity overall (CDC, 2022). The swimming pool industry includes municipalities, recreation centers, health clubs, universities and high schools, resort-style water parks, therapy pools and spas, and more. Municipalities represent the largest category of aquatic facility operators (Athletic Business, 2003). According to the 2022 National Recreation and Parks Association Agency Performance Review, 53% of parks and recreation agencies operate, maintain, or contract an outdoor swimming pool or water park, serving a median number of 38,000 residents at each of these facilities. This median ranges from 8,637 to 113,219 based on populations from less than 20,000 to over 250,000. Twenty-five percent of parks and recreation agencies have indoor swimming pool facilities. These serve a median number of 53,025 residents per facility, with that median ranging from 11,375 to 230,000 based on those same population metrics of under 20,000 to over 250,000. Aquatics is a key programming activity for 70% of city parks and recreation agencies (NRPA, 2022a). The average annual operating costs for aquatic facilities increased by 19.6% between 2017 and 2021, escalating from \$510,000 to \$610,000 annually. The construction of new aquatics facilities was reported by over 13.2% of survey respondents during that same timeframe, outweighing the number of pool closures, which was recorded at a rare 3.4% (Tipping, 2021). More than 300,000 public swimming pools exist today. (Segal, 2021). Clearly, the aquatics industry has established itself as a leader in the market of providing recreational activities.

There are many types of jobs in the aquatics industry. Over 32,000 employees work in the aquatics industry in the US alone (Lange, 2022). These jobs are spread out across both public and private agencies. Municipalities are typically considered the primary employer of aquatics professionals, but many other agencies also have jobs in the aquatics field. These include YMCAs or other nonprofits, state and federal government entities, higher education establishments, and the commercial sector, which includes sites such as water parks and resorts (Buchko, 2021).

In addition to jobs within the aquatics industry itself, other fields also require their employees to possess competency in aquatic operations and programming. Sixty-seven percent of parks and recreation professionals include operating, maintaining, or contracting outdoor swim facilities or water parks as one of their key responsibilities, and 32% are responsible for indoor swim facilities or water parks (NRPA, 2022a). The swimming pool sales and service industry requires a similar level of knowledge to a pool operator. Other companies manage smaller establishments such as country clubs, neighborhood pools, and more, by staffing and running the pools (Buchko, 2021).

When it comes to salaries for aquatics professionals, the 2022 NRPA Park and Recreation Salary Survey listed the average annual base salary for an Aquatics Supervisor/Manager as \$56,300. This increased with education, additional certifications, and years of work experience. This salary amount was also subject to a median increase of 3.5% annually (NRPA, 2022b).

Aquatics professionals must have well-rounded skillsets and be able to fill a variety of roles in their agencies. The growth of the industry and increasing responsibilities of these professionals creates a demand for increased education for these roles. The NRPA Aquatic Facility Operator manual lists some of those roles: “part-time chemist, part-time engineer, plumber, hydraulic expert, mechanic, electrician, custodian, purchasing agent, human resources manager, amateur legal advisor, water safety expert,

coach, concessionaire, entrepreneur, teacher, role model... even a part time cop and disciplinarian” (NRPA, 2017, p. 1).

An example job description for an Aquatics Supervisor/Manager provided by the National Recreation and Park Association lists essential duties and responsibilities as follows:

- *Develops direction for aquatic program areas and services and determines the appropriate mix of aquatic programs and services to offer based on community need; Identifies aquatic-related trends and incorporates changes to services, as appropriate*
- *Serves as the liaison to the community swim team and other aquatic-related partners*
- *Prepares an annual budget, projects revenue and expenses, and monitors the aquatic-related budget on a continuous basis*
- *Manages food concession operations either in-house or oversees a food service vendor*
- *Develops a schedule of pricing of services*
- *Analyzes participation and financial results and makes adjustments to continuously improve programs and efficiency and effectiveness of operations*
- *Creates an overall process to ensure public and staff safety, including the development of an ongoing facility inspection process and water chemistry inspections*
- *Develops an overall orientation and training process and certification requirements for pool staff; Ensures compliance with lifeguard and swim instructor certification guidelines*
- *Hires and supervises support staff involved in aquatics operations and programming*
- *Creates pool-time/pool-use schedules that meet public need and other key stakeholders' and groups' needs*
- *Oversees the investigation of critical safety incidents/accidents and develops an appropriate response for assigned areas of responsibility; Develops an emergency response plan that is aligned with agency guidelines*

- *Handles purchasing and coordinates program supplies and equipment*
- *Maintains accurate and current personnel and general swim/program participation records, and analyzes the information for planning and evaluation*
- *Works with marketing staff in developing an overall strategy for marketing aquatics programs, including developing descriptions of programs for the program guide*
- *Provides excellent customer service in the delivery of programs and works toward achieving excellent customer service from support staff*
- *Manages a customer satisfaction measurement process for all programs and services*  
(NRPA, 2021b)

The NRPA also provides a list of more specific and technical qualifications and attributes an Aquatic Facility Operator should possess:

- *Comprehension of all basic design, mechanical, and operational concepts involved in the functioning of an institutional/commercial swimming pool*
- *Familiarity with all systems, equipment, and peripherals that are required to contain, circulate, filter, heat, and treat swimming pool water*
- *The ability to perform preventive maintenance and basic repair on such equipment*
- *The ability to describe and direct work required for major maintenance or replacement*
- *A functional understanding of swimming-pool water chemistry as it pertains to disinfection, water clarity, physical preservation of the facility, pool shell, and assurance of bather comfort and health*
- *Proficiency in all related concepts for the assurance of patron and employee health and safety, including mechanical equipment operation, chemical handling, lifeguarding principles, and emergency protocols*



- *Organizational and managerial skills, to the extent that the job requires, and certifications, as required, in skills such as lifeguarding, Cardiopulmonary Resuscitation, and Automated External Defibrillator (AED) use*
- *Solid computer literacy and the ability to program pool chemical controllers; download, parse, and store data; and generate preventive maintenance schedules (NRPA, 2017, pp. 1-2)*

The preferred education and experience for an Aquatics Supervisor/Manager includes a bachelor's degree in parks and recreation, physical education, or another related field, as well as a minimum of four years of experience working in aquatics programming and operations (NRPA, 2021b). Although colleges and universities can provide excellent instruction and preparation in many areas, very few target education aquatics industry-specific education that will be necessary for those going into a career in that field.

One university that has implemented a major program in aquatics is Ball State University in Muncie, Indiana. This program claims to be the first of its kind to offer an aquatic specific major in the US. Ball State's program offers coursework in pool operations, facility design and management, staff development, and industry-specific certifications. It also includes hands-on experience through a 12-credit internship (Ball State University, 2022). Since adding a minor program in 1973 and a major program in 2002, Ball State has seen roughly 1,000 students graduate from their Aquatics degree program.

Since university-level educational opportunities are limited, it is typical for aquatic professionals to have held other positions in the aquatics industry prior to their employment in an aquatic leadership position. Acquiring higher-level jobs in the aquatics field requires hands-on experience (Yarger, 2009).

Certifications are another significant aspect of education for aquatic professionals. One major type of certification for aquatic professionals is a pool operator certification, such as a CPO (Certified

Pool Operator) or AFO (Aquatic Facility Operator) certification. In a 2020 survey, 90.8% of participants reported that a management position at their facility possessed a certification in pool operations (Tipping, 2021). Other important certifications for aquatic professionals include Lifeguarding, CPR/AED, First Aid, instructor trainer certifications, and Certified Parks and Recreation Professional or Executive.

Professional development opportunities for aquatic professionals include reading industry publications and texts, keeping up with certifications and training, continuing education units or more advanced degrees, attending conferences or classes, meeting and networking with other aquatic professionals, or being part of a professional organization (Yarger, 2009).

## **Methods**

### **Research question and sub-questions**

Major Research Question: How do educational opportunities for college students who want to pursue a career in the aquatics field compare with industry growth and is more education and/or outreach needed?

- Sub-question A: How has the aquatics industry grown?
- Sub-question B: Do college degree programs prepare individuals for a career in aquatics and has the education kept up with industry growth?
- Sub-question C: How should someone who wants to go into aquatics as a career educate themselves?

These questions were derived as a way to better understand the lived experiences of professionals in the industry. These leaders are well acquainted with the demands of the field and are able to speak with authority about trends, needs, and opportunities. An interview guide with questions developed from the major research question and sub-questions served as benchmark for discussions.

### **Methodology and reasoning for choosing this methodology**

This study used interviews as a basis for a qualitative analysis. A qualitative analysis allowed for the exploration of descriptive and explanatory concepts relating to educational opportunities for aspiring aquatics professionals. This methodology allowed for investigation of individual experiences as well as overall themes, and explanation and suggestions by participants.

Ten in-depth interviews were completed with participants who were either current aquatics professionals or had responsibilities in the aquatics field. Participants were selected by the researcher using convenience sampling and snowball sampling techniques to collect a pool of educated professionals who had multiple years of experience in the aquatics industry and represented various geographic, demographic, and job title factors. Participants were contacted by the researcher by email, phone, and Facebook messenger with a description of the study and a request for their participation. Interviews took place in person and on Zoom with the primary researcher and the interviewee present and were electronically recorded for later transcription. Participants were provided with a brief description of the purpose of the study. Participants each responded to the same questions, as presented in Appendix A, to gain data for analysis.

Participants' gender makeup was eight females and two males. Participants worked in various areas of Texas, Florida, and Arkansas. Eight participants were currently employed in the public sector and the remaining two were employed in the private sector. See Appendix B for a demographic representation of the participants.

The analysis involved thorough reading of all interview transcripts preceding the development of a coding system. Major themes emerged and then transcripts were read and any material relating to the major themes were sorted into a spreadsheet and further divided into sub-themes. This allowed for the assessment and validation of themes and descriptions of personal experiences. Topics were then portrayed in the results section of this study and then justified with direct quotes from interviews.

This study differs from past research by exploring the experiential knowledge of participants to develop a specific set of educational steps that could be taken by a college student who wants to pursue aquatics as a career.

## Results

### ***Industry Growth and Development***

Participants discussed the historical growth and development of the aquatics industry, noting several themes: realization of aquatics as long-term career, updates to facilities and equipment, development of industry organizations, higher public expectations, new and increased programming, expectation for higher cost-recovery percentages/more revenue streams, increased safety requirements, and changing social elements.

Two participants mentioned the development of aquatics as more of a serious long-term career option in recent years, with the realization of what it actually takes to run an aquatic facility. Participant 9 shared,

*I think it was looked at in the 90s and early 2000s as, well that's like a kid's job, so a 16- or 18-year-old should be managing a pool, and I think the longer that people were in that position, the more they realized the seriousness of that position and the maturity that's needed to hold down a job like that. I think in the early 2000s you saw this boom of professionals kind of stepping up and then the 2010s you started to see more and more the pay rates were starting to creep up, you know, you weren't making 20 thousand dollars a year anymore, 30 thousand dollars a year, they were starting to realize that there's a lot of work that goes into this... you live at your pool for 80-100 hours per week, that's pretty much the norm, and I think the expectation shifted in the 2000s... now it needs to become an experience, there needs to be programming, there needs to be an aesthetic to your pool, this is a community service, and so people started demanding a lot more than just a rectangle cement swimming pool, they wanted slides, they*

*wanted interaction, they wanted it to feel like it was more of a country club or a waterpark, and then as you moved into the 2010s and 2020s, I think there just became a lot more expectation for professional development, or entrusting that you're gonna take care of our teenagers, as an aquatics supervisor, for their jobs, that you're gonna take care of our kids, programming needed to look a lot better. There's a lot more expected in this role than there used to be. You are responsible for marketing, you are responsible for programming, budgeting, strategy, social media, so the community expectation has grown, and that's whether you're in the public sector or you're in the private sector. And on top of that, you know, you have everyone walking around with cameras, and so whatever you're doing is publicized, or blown up, whether you want it to be or not.*

Another major theme that emerged from the discussion of the growth in the aquatics industry was facility updates. Five participants described the shift from early pools that were essentially a concrete box to bigger aquatic facilities that are much more complex with many more amenities. Massive water parks with more entertaining attractions are a great example of this. Participant 7 described this shift: *"It's more fun-for-the-patron water."*

Two participants mentioned the development of organizations in their answers. In earlier years, facilities operated independently without much collaboration or exchange of information, but as the aquatics industry has continued to grow, organizations have developed that encourage that collaboration between facilities and increase the quality of service that those agencies can provide by offering a forum for education and networking.

Three participants brought up new and increased programming as an area of growth. Even outside of swim lessons and swim teams, aquatic facilities have expanded their program offerings. Participants mentioned newer programs such as water aerobics, surf simulator programming and lessons, kayaking, adapted aquatic recreation programs, other unique sports, and even underwater

basketweaving that have also had success in their agencies. In addition, other special events such as dive-in movies and more are typically expected from aquatic facilities today. Participants also included the overall higher expectations from the public regarding programming in their discussion of the topic.

Higher expectations from the public was another major theme discussed as six participants mentioned this increase. Participant 9 suggested, *"Now it needs to become an experience, there needs to be programming, there needs to be an aesthetic to your pool, this is a community service, and so people started demanding a lot more than just a rectangle."* Patrons also expect more transparency and accountability, whether that be in financial or safety aspects.

There has also been a trend for aquatic facilities to aim at being higher cost-recovery facilities and a push for increased revenue streams. Three participants mentioned this trend.

Safety, in training and standards, has also continued to develop. Drowning prevention and scientific development have led to a higher emphasis on swim lessons, training and techniques for lifeguards, and risk management. Five participants discussed the increase in standards for safety. Regarding the lifeguarding side of safety, Participant 4 said,

*The techniques have gotten way better. You know when I started in '98 as a lifeguard, they barely had any rescue tubes, you had to go out and save them with nothing, and that was tough, and you had to tread water... we've evolved in the sense of our resources to make rescuing somebody easier and quicker.*

Other regulations and safety standards have also developed or increased their requirements. These include the Model Aquatic Health Code from the Center for Disease Control and Prevention as well as other federal, state, and local codes.

Social aspects have also played a role in the development of aquatics. Two participants discussed how aquatics facilities have grown with social change. One of the major historical changes that has

impacted the aquatics industry is the civil rights movement. Minorities have historically been put at a disadvantage in aquatic environments. Participant 6 explained,

*Aquatics has come a long way, originating from bathhouses and being a men's only environment, to then developing into segregated populations, eventually with the overturning of segregation being a members-only, to kind of keep segregation at a height, and eventually we got into community pools.*

Today, there is still a push for growth in that area. Participant 2 described how that social change had lasting effects.

*There's a lot of minority communities that do not know how to swim, because there has only been a very small time in history where they have even been allowed to utilize the public facilities. And so there has been a really big push recently to get people that are minorities to break that family generational trend of not knowing how to swim. If you walk into a big aquatic facility, most of your lifeguards are going to be Caucasian, and so really reaching out to those minority populations and saying, 'Hey we welcome you with open arms, we want you to be a part of this and we want you to learn how to swim. This is a huge safety issue.'*

Another participant discussed how swimming pools have provide a center for community social interaction and mentioned the increase in attendance numbers over the years. Participant 7 said,

*We do 1000 people a day. I remember when went to my neighborhood pool, we may have had 100 people. If we had 100 people, we had a great day that day. But most of the time, you had 50 people there, you were busy. Now it's not that.*

### ***Increased Demands of the Aquatic Professional***

As the aquatics industry experiences this growth, the need for education and the responsibilities of aquatic professionals have also risen to meet the increasing industry standards.

One theme that emerged in discussions was having multiple responsibilities in different areas. Participant 5 described their job responsibilities as *“Pretty much almost everything. I say what happens inside those double doors, I’m probably responsible for it.”* Participants also discussed other specific areas of responsibility that fell under their domain as aquatic professionals, including programming, lifeguarding, maintenance, special events, guest services, other athletic programs, swim teams, serving on various committees and in organizations, responsibilities in other areas of parks and recreation, emergency preparedness and risk management, and more.

Another theme that emerged was the difficulty of keeping a good work-life balance due to the long hours, high stress and responsibility levels, and sometimes lack of support as a professional in the aquatics industry. Regarding work-life balance, two participants discussed the increase in demand of the job. Participants attributed the difficulty of finding and keeping professionals in this industry to this increasing demand. Participant 1 stated,

*I also do feel like we are on a downslide in a sense that there's an age gap between everybody who's managing right now and then managers coming in. And I do feel like that gap is going to hurt us when people who are my age or little bit older than me start leaving the aquatics industry... I think the age gap exists cause I think aquatics wasn't cool for a while... and when there's not degree programs that funnel people, and then aquatics doesn't pay a lot, and so I think that affects it.*

Four participants discussed the need for outreach to college students to educate the new generation of aquatics professionals. Participant 4 shared this sentiment.

*We're hitting a turn where these amazing aquatic professionals have been in the game a long time. And we're seeing slowly in the next couple years this shift. And we need younger aquatic professionals to come in the game, because these people that have built legacies in their states and across the country are slowly going to be retiring and getting out, but right now I feel like we*



*have the best in the industry, but we're losing a lot too. Covid has definitely done a number on aquatic professionals. There has been a decrease, especially in my area, of aquatic professionals that been in the game a long time, like myself, and we are now getting out, and it's not because we don't love it, but the demand and how things have changed in our industry, has taken a toll and it's getting more difficult, and we're not getting the support from above in some instances, some people are, to change the way aquatics is being run. We're losing people because it's burnout, and we're not getting these opportunities to bring wonderful young people... into the industry, you know, they're not wanting to touch it because A., they don't know it or B., they're just like hell no that stuff is crazy over there, so yeah definitely I'm feeling, in my opinion, a shift in our industry, as a whole across the country, there is a big shift and how we come back from that or handle that I should say, is going to be interesting.*

In addition to the lack of degree programs to funnel people into the aquatic profession,

Participant 3 described another barrier to college students receiving education in the aquatics industry.

*I would think that it would be knowing that it's a career path that you can that you can take.*

*Unless you've grown up in the aquatics world, not many people can think of running a water park as a career opportunities, so just the knowledge that that's an available option I think is probably what's hindering it the most.*

Participant 2 shared another contributing factor.

*I think it can be really hard for college students, and a lot of times if they're part-time, they're having to pay for educational opportunities like certifications out of their own pocket, when if you were a full-time employee it would have been paid by your organization a lot of times and so I think that can be difficult as well.*

Four participants discussed the general idea that aquatics specific educational opportunities had not kept up with the growth in the industry. Participant 8 expressed,

*I think what's kind of weird is that they haven't. Well so like there's probably been a need, but like the education hasn't been there to meet the need... To be an aquatic professional, you had to keep up with so much more, and I didn't always feel like I was equipped to, or I always felt like I was missing something, like I would go to bed at night and be like, did I do this, did I do that, did I do that, am I gonna get like audited tomorrow, like on the open records request... I don't know, I feel like there hasn't been enough like things that support aquatic professionals in the education realm.*

### **Looking at College Degree Programs**

Participants expanded on the theme of college education and assessed degree programs as preparation for a career in the aquatics industry. The lack of degree programs that did have a focus in aquatics was a major theme, but participants also discussed other aspects of college education.

Regarding choice of majors that were available, the main two themes that emerged were Recreation or Business-related fields. Five participants recommended Recreation related majors. Participant 2 suggested,

*I think if you can get a recreation degree that would be great especially if you want to move up in aquatics because that is it is the rec field and so that will help you not only with your current position but if you want to move up further.*

Business and related fields were mentioned by two participants as degree programs that could be beneficial. *"I would say business management would probably be a very good course direction to go because you are going to get that accounting side, that budgeting side, but also the leadership side,"* commented Participant 3.

Six participants in this study had their Masters' degree. Of these degrees, four were in Recreation or a related field, and two were in the broader category of Public Administration. Participants typically regarded these degrees as more specific to their industry and applicable to their careers than

their undergraduate degrees had been. For students going into the aquatics field who do want to pursue a Masters' degree, participants recommended choosing one of the routes mentioned above or a Masters' in Business Administration.

All 10 participants indicated that they felt college degree programs, though often a requirement for employment, did not adequately prepare students for a career in aquatics. However, four participants did discuss the benefits of having a college education. Participant 9 remarked,

*I think that they provide the tools that are necessary to be successful in Aquatics but it is up to the individual to utilize those tools to be successful, like we've talked about there's not a college course about aquatics, there's not an aquatics course about how to operate a pool. What there is, is basic math, then basic English, and then philosophies, and you have to apply those tools that you've been given to the workplace.*

Seven participants also felt that experience in the field was better preparation than getting a formal degree. One idea brought up was the concept of building blocks. *"You have kind of like building blocks, right. And so the stronger you can build your foundation, the better you will be. And sometimes that means education, sometimes that means experience,"* described Participant 2. Other participants added to this thought as well, suggesting that personality type, having a learner's heart, and taking initiative to educate oneself through certifications, continuing education, reading articles, and being involved in organizations were building blocks that could be just as important or even more valued than college education.

One of the driving themes behind the feeling that college degree programs did not adequately prepare students for a career in the aquatics industry was the lack of aquatics applicable education within those college degree programs. Nine participants brought up this deficit. This absence was discussed across degree programs in general, but one specific area mentioned by six participants was the

need for more aquatics focus in parks and recreation degree tracks. *“I think Aquatics ends up being the red-headed step child of the department,”* commented Participant 6. Participant 8 continued this idea.

*The parks and rec tracks don’t really focus on aquatics, like if you go to college and say, I wanna be an aquatic professional, like what are you supposed to major in? There’s not tracks specific to that, there’s not ‘How to be an aquatic professional, here’s the training manual’ type thing.*

Participant 4 expressed the desire for a more aquatics-focused track within recreation-related degree programs.

*If I was in a Parks and Rec degree, I wish they kind of did a whole crash course on aquatics, what it takes, what certifications you might have to have, how do you build a schedule, how do you work with or interact with teenagers, crisis management because you're dealing with drownings, how to lesson plan learn to swim, these are just little snips but you could do a whole semester, half the semester you could just do learn to swim stuff and the other half lifeguarding. I wish I wish they had more of that.*

### **Building Blocks for Success**

A major area of discussion that emerged as a result of the previous assessment was the topic of how students should proceed in their education in order to prepare themselves for a career in the aquatics industry, given that degree programs were currently insufficient. These steps could also be used as an outline for a self-study program or a formal degree program.

**Certifications.** One of the major themes that emerged when interviewees discussed the need for education was certifications. Participant 2 stated,

*I think there's been a big push for certifications, I think a lot more people are getting more than a water safety instructor and a lifeguard certification, they're going up further which is great, more knowledge, more skills, more practice is awesome.*

The main certifications that were mentioned were operational certifications (Certified Pool and Spa Operator/Aquatic Facility Operator), lifeguarding certifications, swim lesson certifications, the Certified Parks and Recreation Professional certification, and the Aquatic Professional Designation.

All 10 participants interviewed mentioned both the Certified Pool and Spa Operator (Pool and Hot Tub Alliance) and Aquatic Facility Operator (National Recreation and Parks Association) certifications. They all advised getting at least one of these certifications, emphasizing their necessity when working at an aquatic facility. There was some discussion as to which of these two certifications was better, but participants were of the general consensus that the base knowledge from both courses was beneficial and necessary as an aquatic professional. Two participants also advised moving up to the instructor level for those certifications. In addition to the AFO and CPO certifications, the Advanced Water Quality certificate and the Splash Pad certificate from the National Recreation and Parks Association were mentioned by one participant. The topic of maintenance knowledge overall was a repeating theme throughout this study and is expanded upon later in the results as a specific educational topic for those going into aquatics.

Seven participants mentioned having a lifeguard certification, whether it be through the American Red Cross, Ellis and Associates, Starguard Elite, or another organization. This certification is also a requirement for most jobs in the industry. The topics of general life safety, CPR, first aid, etc. were included under that umbrella. Participant 2 emphasized the importance of these types of certifications.

*For aquatics specifically, certifications are very important for a couple reasons. One, information changes, science, we learn more things, we have more research every year, the medical standards change... and so if you are going off of old information then you could be teaching the wrong information, if there's an emergency situation you might not be on the same page with the other people who might've just gotten certified, and finally, you might be providing not the best care for a potential victim.*

Eight participants felt that it was important for aquatic professionals to move up to the instructor level certification for lifeguarding. *“You want to be able to train your own lifeguards with facility specifics, you want to be able to have that higher-level viewpoint to understand how skills are supposed to be put together,”* described Participant 5.

Six participants also encouraged attaining the next level of that certification route as an instructor trainer. One reason for adding that certification was *“so that you're not teaching all of the instructional classes,”* according to Participant 10, allowing focus on other priorities during the busy hiring season. Participant 6 provided further reasoning.

*Being able to home-grow your own staff is incredibly important as an aquatic professional, I know my IT certifications keep me at the standard of the Red Cross and at the forefront of training, and then being able to develop my own instructors to that has developed my own baseline staff, that has been the most beneficial and the most rewarding.*

Participants also heavily emphasized getting some sort of swim lesson instruction certification. The Water Safety Instructor certification from the American Red Cross was the primary option discussed by five participants. Three participants also encouraged moving up to that next level of getting a Water Safety Instructor Trainer certification in order to be able to certify other swim instructors.

Three participants also brought up the more recent Aquatic Professional Designation from the Association of Aquatic Professionals. They described it as a more overarching, general certification for an aquatic professional, as well as being the leader in that category. Other general aquatic management certifications briefly mentioned were the Aquatic Management Professional Certificate from the National Recreation and Parks Association and the Lifeguard Management Course from the American Red Cross. Regarding the Aquatic Professional Designation, Participant 9 said,

*It's a pretty lengthy process, and there's a lot of CEUs that are required, you have to have been in the industry for X amount of years or received your undergrad. That's kind of their own way of*

*saying, hey, this is a bona fide, certified, check mark aquatic professional, this is not someone who's just faking it, so I do think that that will become more popular.*

A more overarching recreation certification program discussed by five participants was the National Recreation and Parks Association's Certified Parks and Recreation Professional certificate. *"It covers areas like finance, it does cover areas like human resources, it covers maintenance, it covers leadership,"* testified Participant 2. Participant 10 claimed, *"It really helped once I got into municipal government."*

Other certifications discussed included food and beverage related certifications, civilian response to active shooter events (CRASE), other NRPA sidebar certifications, and business and marketing certifications. Other certifications are also available to research online.

**Organizations.** Another major source of education discussed in the aquatics field is the opportunities through various industry organizations. These opportunities include in-person conferences, group meetings, webinars, research articles, other publications, Facebook groups, or online courses. *"I think that you're seeing more and more aquatic professionals who are taking it upon themselves to create those opportunities for new aquatic professionals, because we're constantly saying, well I wish they had had that when I started, and they are a very sharing community by their nature,"* said Participant 9.

Participants mentioned the following organizations in their discussion: World Waterpark Association, Association of Aquatic Professionals, National Recreation and Parks Association, Texas Recreation and Parks Society, North Texas Aquatics Association, Texas Public Pool Council, International Association of Amusement Parks and Attractions, and World Aquatic Health Council.

Industry conferences are viewed as a major source of education within this category of organizations. Each of the above-mentioned organizations host conferences. Six participants talked

about the various conference opportunities that have opened up in the field of aquatics, including Participant 9.

*The opportunities have increased, there's a lot more conferences out there, and I think you saw people in the 80s and 90s who were like, man, I wish that there were conferences for me to go to. Texas Public Pool started out in the 80s, and has just continued, because they wanted to come together and other professionals wanted to talk and bounce ideas off of each other, so I think that we have seen the professional growth and development triple or quadruple. You have organizations like the Association of Aquatic Professionals who used to be a tiny little organization based in Austin, and now they've blown up, and they've got people all over the world coming. World Waterpark, which used to be for just the biggest parks, like the Disneys and Hurricane Harbors and everything, now you've got municipalities who are able to walk side by side with the big boys, and they're integrating amazing things into their small community parks, because that is the expectation from our consumers these days.*

Participants discussed both the benefits of both the educational sessions as well as the peer networking side of conferences. Three participants brought up the education sessions available at industry conferences. Participant 4 discussed what professionals were able to take away from these sessions.

*The sessions themselves, like the crisis management, and after you have a drowning, and things like that, that maybe you don't really get to learn unless it happens to you, there's no book for it you know, there's no education for it. So you're learning off people that have these sessions that really talk about what truly happened to them, so real life stories that you can relate to and say, that's a great idea, or that's how I would handle it if that ever happened to me... Also just the education on learn to swim, and how you manage a staff of 200, and how you would build your learn to swim program, and different tips and tricks that maybe you didn't think of, but this*



*person doing this session does it in the City of Phoenix, that you would have never heard, and how they work their budget compared to your budget... In aquatics, you borrow ideas, you share ideas... I feel like conferences, that's what it's about, all the different tips and tricks maybe somebody else would do that you could relate, you could take back to your program.*

Four participants also mentioned the benefits of peer networking, sharing ideas, and being able to learn from other industry professionals at these conferences even outside the educational sessions.

Participant 9 said,

*In aquatics you can't beat firsthand knowledge, and a lot of that is like you live and you learn and kind of trial by fire. The conferences I feel like are extremely beneficial because of the networking, and you're just drawing from other people's experience, and so you have a lot of those conversations probably outside of the sessions, sessions are a great way to jumpstart it.*

Participants greatly advised attending these industry conferences at the local, state, and national levels if possible. The educational opportunities at these conferences were highly respected, but participants did suggest that there was a lack of outreach, advertisement, and accessibility of those educational opportunities to students. *"I think it's out there but... I just don't know that it gets to students,"* said Participant 5.

Even outside of conferences, the sharing of ideas between peers in general was a major theme discussed by participants. Participant 1 explained,

*There is a lot of sharing that goes on in the aquatics industry, not just at conferences but you know via Facebook groups and emails and when you run into them at local meetings and things like that, so I feel like we're all very open with each other and I feel like that is very beneficial to all of us.*

Two participants specifically discussed organization meetings as an educational opportunity, whether in-person or virtually. Participant 4 offered a testimony regarding this outreach during the 2020-2021 seasons.

*When covid hit, all of our water parks, everyone was freaking out right. So we decided to do these covid talks every week. Everybody was shut down, but how the hell are we going to open these water parks, everybody's nervous and scared, cities want us to open, they don't want us to open, what can we do to keep staff safe. And so these zoom calls that I kept doing kept getting bigger and bigger and bigger. And every week we had a topic, every week I got a speaker. We were able to connect people from across the country, we had 650 people on a call once, I mean, people from Hawaii, Canada, it grew so big, and it was all because we were in it together.*

Participants encouraged being as involved as possible within these organizations, virtually or in-person. One participant also mentioned informal online forums such as facebook groups that could offer networking opportunities and facilitate the exchange of ideas.

Other learning opportunities discussed by participants through the above-mentioned organizations and others included webinars, articles, continuing education credits, and other online courses or certifications. Two participants mentioned webinars and articles. *“Being involved in this stuff, so you continue to learn, learning never stops, so you always have to kinda see what’s happening, read the articles, and see who’s doing what, who has the new great idea of programming,”* said Participant 7. One participant mentioned continuing education credits and other online courses.

**Other educational topics needed.** This study also explored other educational topics that are necessary and/or beneficial for aquatics professionals, such as those that they could pursue in a college course as well as those that were lacking in college courses.

One major theme that emerged as a topic of education that would be beneficial for those going into aquatics as a profession was the general category of business, including finance, marketing, administration, and more.

Seven participants discussed the importance of *“the true basics of business,”* as referred to by Participant 10. These included marketing, administration, management, and others. *“If you look at aquatics as a business, having that business management degree I think would be very beneficial, whether that’s aquatics or even parks and recreation,”* suggested Participant 3.

Participants also discussed finance as a prevalent theme within the area of business. Nine participants brought up the topic of budgeting. *“Every aquatics program, whether it’s with the city or another one, follows a budget,”* explained Participant 8. Participant 6 expanded on this. *“Budget is something that is so crucial to the operations of successful aquatics departments... I think that can always get developed and refined a little bit more.”* Participants also mentioned the trend of facilities aiming to be more cost-recovery. Participant 2 commented,

*Aquatic facilities are very expensive and so learning how to make money off of programs and keep your facility afloat especially in a time of recession or when you're trying to cut budgets or when you don't have as much funding is important as well, I think sometimes we just kind of don't think about a lot of things when it comes to our budgets and so I think really learning in depth about how much things cost.*

Participants also emphasized that different types of agencies, such as public sector and private sector businesses, manage their money differently, and that even within those categories, different individual agencies have vastly different strategies and priorities for their budgets.

Five participants also discussed the importance of accounting. Participant 2 testified,

*This is my third pool opening in five years, third construction project in five years, and I'm still having to work really closely with accounting, what do we need to do with this, what do we need to do with that.*

Participant 2 also highlighted the topic of purchasing.

*States have laws, especially for municipal facilities in order to make sure that we are using taxpayer dollars the best of our ability, and so learning the legal ramifications, so for example... if you purchase something over \$3,000, you have to get quotes, several different bids for it.*

The financial discussion also included brief mentions of the necessity of cash handling skills and front-end transactions.

Five participants also suggested the topic of legal knowledge. This category enveloped both human resources/employment law issues as well as health codes and other regulations.

Three participants encouraged learning about state and local codes and regulations. Participant 2 noted,

*You do inservice once a week, but why do you do inservice once a week, what are the requirements for that? If something happens with your pool, well we close down for thirty minutes if someone throws up in the pool, well why do you do that? And not only does the state have regulations, but different cities have regulations too. So for example the state health code says that you have to keep your chlorine at a 1.0 parts per million, City... says you have to keep it at 2 parts per million. And so that is a different standard, and so it's important."*

Participant 1 continued that thought. *"The law is everchanging, policies are everchanging, and so just constantly being able to keep up with that kind of stuff."*

Two participants commented on the risk management side of the legal realm. *"A waterpark is just a massive risk management issue, and you're just mitigating things every day,"* said Participant 1.

Participant 8 explained this further.

*The risk management side, that's a huge part that I feel like is lacking. I was always anxious as an operator because I never felt like someone just like sat me down and said, 'Hey, this is all the liable stuff that you need to make sure you check all these boxes,' and so I was constantly hunting down the different codes and trying to decipher the coded language, because it's not just written in layman's terms, it's very hard to understand, you have to read it multiple times, are you attributing it the right way, and so education centered around that kind of stuff, the stuff that could cause a lawsuit in your facility, it would be nice if someone just sat you down and had a course, and said, 'Hey, make sure you're doing all these things before you become an operator.'*

Three participants put forward the topic of HR and employment laws. *"There could be very serious and expensive consequences to your organization if you are not supervising correctly or if you say one wrong thing,"* said Participant 1.

Relating to the topic of human resources, Participant 9 also suggested learning about onboarding.

*How would you go out and recruit people, what would that process look like after you recruit them, how would you bring them through the interview process, how would you bring them through the onboarding process? Because in many cities, large and small, HR is pretty hands off on the recruiting and the hiring and the onboarding, and so that's a daunting task for any aquatics professional.*

Scheduling was another area discussed by four participants as a necessary skill to have.

Another prevalent theme participants discussed was leadership and management style. Seven participants brought up the importance of being educated in this area. Within that realm, they specifically emphasized development of culture. Participant 9 observed,

*You are in charge of shaping a lot of individuals, it may be their first job, or early on in their career. Culture I think is a big thing now that we're seeing that when I started, it was not as big of*

*a thing, how to create positive working environments. I think culture plays almost a bigger part in their choice of a job than money does. So you know, if you pay them \$2 more, but over here it's a better culture, and maybe they train you, and they provide you some more resources, I mean, most lifeguards these days are gonna make that choice.*

Participants included other soft skills in this discussion, such as being good with people.

Participant 2 stated,

*You have to be good working with people, you have to be good with the public. You could have the most well-trained lifeguards all day long but if everybody hates their job and you don't know how to manage them, then you're not going to keep them around for very long and you're not going to have a good work environment.*

Another soft skill mentioned was conflict resolution. *"There's a lot of conflict resolution, a lot of decisions that have to be made, a lot of decisions that you have to back that up,"* said Participant 9.

Dealing with staff, disciplining, and customer service skills were also mentioned.

The trends in generations were also discussed by three participants. Participant 1 shared, *Kids change. The kids that I'm managing now are way different than we managed five years ago. They're just very different. They're not gonna read emails. And I just feel like we constantly need to be learning those things about our staff.*

Three participants discussed the need to be educated in communication skills. These included written communication, social media usage, oral communication, and communicating to different audience types.

Two participants talked about the necessity of good written communication. Participant 6 gave one reason for needing strong writing skills, *"Because aquatics is so regularly underfunded and we also deal with drowning awareness, we need to apply for grants and scholarships out there, which all takes great composition."*

Regarding social media usage, Participant 9 suggested some specific points of education.

*How to engage, how to disengage when you have something that gets posted on social, how to handle that, because everything is moving in that direction, and if you're not actually in charge of social, I think that's still all of your users, whether that's a guest or a team member, they're utilizing socials.*

Another reason given for being educated in social media usage was for marketing purposes.

*"Looking at trends, looking at social media posts, especially if you're advertising for events, or private water parks, learning how that marketing can really be a driver in your bottom line revenue would be great,"* said Participant 5.

Under this umbrella, participants also discussed the need for good oral communication skills.

Participant 9 said, *"You're put in a lot of situations where as a younger person or a greener person, you may be having to defend situations."* Relating to oral communication, participant 5 also discussed the need to be able to communicate to different audiences.

*We're communicating with multiple different demographics all at the same time, so whether it's my preschoolers and toddlers in our "Learn to Swim," it's our elementary school age kids in a swim team, it's your teenagers that are lifeguards, it may be your active adult population that's in your water aerobics class or lap swimming, and then your parents that are booking birthday parties. And so you're communicating with multiple demographics of individuals and how to cater that communication based on who your audience is.*

Another area discussed by two participants that related to the topic of being able to cater material to different audiences was education itself. In other words, learning how to teach and train staff effectively, or including some things from a teaching curriculum. *"A lot of what you do as an aquatics operator is teach, whether that's teaching like lifeguard and swim instructor skills, or you're training your cashiers, or you're training your management team how to be better managers,"* reasoned Participant 8.

Five participants also suggested having some coursework or classes in programming. This entailed the planning, financial aspects, and running of programs such as swim lessons, camps, and other activities. Participant 9 shared an outline of what that could look like.

*Program development would be a good one, that would be one that's digestible within a college course, so you have x amount of weeks to research a program, put together a program scope, budget, propose the program, come in with some kind of marketing campaign or whatever you're gonna do to roll out that, so I feel like that would be very helpful. No matter what area of aquatics, there's programming into it, whether it's your swim lessons, and needing to revitalize a stale program, or a special events thing you wanna try to roll out to try to make more money or to serve your community in some way, so I think programming plays a large part into it.*

Another broad educational topic participants touched on in discussions was science. This included elements of kinesiology, water chemistry, and the science behind lifeguarding. Three participants mentioned kinesiology. *"Some kind of kinesiology or movement so they understand, like I know in the WSI class they talk about buoyancy and body, and I think having some kind of knowledge how the body actually works is kind of important,"* justified Participant 10. Three participants also emphasized the importance of having some chemistry basics in regards to understanding water chemistry and how different chemicals work together within a pool environment. Participant 5 commented,

*There's people that tell them, 'Oh the pool's green just shock it,' it's like no, take a step further and understand, like if you shock it, there's an after-effect, and there's a cause and effect, and sort of leaning into troubleshooting just a little bit further throughout the process than just that initial reaction to it.*

One participant also mentioned having knowledge of the science behind lifeguarding.



Participants also suggested the general category of technology use in as an area to be educated in as an aquatic professional. Eight participants advised education in this area, especially related to administration and pump room management. Regarding administration, Participant 9 observed,

*The industry is quickly moving towards technology, in the scheduling, in the payroll, in the clock-in side. I think that the facilities that are progressive are also adopting that in digital documentation, the use of video cameras in their facilities, and those kinds of technology type advances.*

Four participants also talked about the technological advances in pump room management such as connected chemical controllers and more. Participant 10 offered an opinion on the knowledge levels in this arena.

*There's a lot that is out there maybe, but there's a lot that people don't know about, either they don't know or they don't know how to use it. Or it's not feasible for their department to use it, they can't afford it.*

Recreation was a major theme mentioned by participants as an area of study. Five participants recommended getting an undergraduate degree in some sort of Recreation program. They generally felt that there was a lot of applicable knowledge that came from that area. Participant 4 shared,

*You get the budgeting, you get the programming, you get the planning, you get the coaching, you get the team building, things like that, and that all relates to aquatics, those all can be totally relatable into the industry for sure.*

Participant 10 offered adapted recreation as a topic within this category.

*We had a therapeutic recreation class that was mandatory for graduation so having that as like a thing in your back pocket in case you get asked to do a program like that, which I know is getting more and more popular, but those types of classes I think are beneficial for anyone in the rec or aquatics field.*

Four participants talked about the importance of being educated in strategic planning and construction of new facilities. Participant 2 defended this sentiment.

*The thing about being in aquatics is that there's a lot of experts in construction, but there's not necessarily a lot of experts in aquatics. And so when you're building a pool you really have to make sure that you are paying very close attention because you can't assume that the contractor is necessarily going to have experience with that, and so you need to make sure that they are building the pool correctly, putting the correct safety things, they're staying up to health code, all of these other things, and so it's not the same as just a normal building.*

Two participants discussed the necessity of being educated in public administration processes when working with local governments. *"The side outside of programming, like how funding works, and bigger scale budget stuff, and the politics, all that kind of stuff,"* described Participant 8.

Nine participants heavily supported the category of maintenance as an area that all aquatics professionals should be educated in. While operator certifications were generally regarded to provide good base knowledge, eight participants suggested that possession of those certifications alone was insufficient in the field. Participant 9 expressed,

*I got my CPO thinking it was gonna be more in depth on systems than it was... it was like a 10,000 foot view of pool management, and I walked away being like, okay I can tell you how much water is in my pool but I can't tell you anything else. I think that's an area that a lot of people lack confidence when they come into the job, and unless you spend a lot fo time learning about them, and studying them, I think most people go in feeling like they are underprepared. And the problem with a job is a lot of times once you get into it, there's not a lot of excess time to actually learn.*

Specifically, participants referenced a need to be hands-on in those maintenance skills on a regular basis. Maintenance was an area in which participants felt strongly that there should be more education in. Participant 5 expanded,

*It's really specialized equipment, and until you really want to get into it, which you probably don't if the green light is on and everything is going great, only when that red light comes on, then you're like oh, I need to take a look at this, do you really start diving into it and then you realize it's a can of worms. I definitely think there needs to be a little more education on it, just as far as like, 'Oh the pool's green, I'm gonna shock the pool. Great but what does that mean for tomorrow, like why did the pool turn green, really go do the troubleshooting, figure out what the cause of the issue was. Is your filter on, is your filter dirty, has your turnover rate gone down, has your flow rate gone down, is your chemical feeder working, is your chemical feeder undersized for the body of water, and did you have a high patron load, was there organic material introduced? So do the actual troubleshooting, figure out what the actual problem was, don't just jump to the first easy answer.*

Some specific topics within the maintenance umbrella included concepts of mechanical engineering, electrical engineering, water chemistry, filtration, pumps, how to operate different types of equipment, and more.

Several other "hands-on" areas of experience were also discussed. Three participants discussed the importance of having experience in roles such as lifeguarding, teaching swim lessons, and pool managing or being a head guard.

### **Summary of Conclusions and Discussion**

The overall themes that emerged through the interviews were (1) the historical growth and development in the aquatics industry, (2) the increase in responsibilities and educational demands for aquatic professionals due to that growth, (3) educational areas that are beneficial for those going into

the aquatics industry, (4) the lack of aquatics specific education in college degree programs, and (5) the need for outreach from the aquatics industry to help students in their educational journeys to entering that profession. The interview answers mentioned in the results section provided some specific examples, background, and deeper explanations of these themes.

This study looked to answer the major research question, “How do educational opportunities for college students to go into the aquatics field compare with industry growth and is more education/outreach needed?” It did this by answering it in sub-questions.

Sub-question A asked, “How has the aquatics industry grown?” The interview results showed significant development historically, but also a surge in recent years beginning around the 2000s. Interview answers also suggested that this growth and development generated a higher demand for aquatic professionals to be educated and have increasing levels of responsibility.

Sub-question B asked “Do college degree programs prepare individuals for a career in aquatics and has the education kept up with industry growth?” Interview results indicated that most participants felt that while college degree programs could be beneficial and provide some important basics (especially within the recreation and business fields), there was a lack of degree programs or classes that included aquatics-specific knowledge. The overall feeling was that college degree programs did not adequately educate individuals for a career in aquatics. Interview results also delved into whether education had kept up with industry growth. There were some mixed answers regarding this. Some participants felt that education had not kept up with industry growth whatsoever, and some felt that the education for professionals outside of a college degree had kept up with growth, but that there was a need for outreach to students about those types of opportunities. The discussion on the need for outreach included mentions of an age gap group in aquatic professionals, the lack of knowledge that this was a viable long-term career option, and the lack of knowledge of those other types of educational

resources such as organizations, conferences, certifications, and more. The financial aspect was also mentioned as a barrier for college students.

Sub-question C asked “How should someone who wants to go into aquatics as a career educate themselves?” Both the previous questions involve some concepts that answer this question. The general advice was to find a mentor, get involved with any organizations you could be in, get hands-on experience working in the industry, take certification courses, and get a degree in recreation or business or a related field. Specific areas of education were also mentioned, such as leadership, communication (oral/written/etc.), financial knowledge, human resources concepts, and more.

The interview results were consistent with the information presented in the literature review. They confirmed significant industry growth, extensive responsibilities of aquatic professionals, a lack of college education specific to aquatics, and recommended the same educational pursuits outside of a degree program (certifications, reading industry texts, continuing education units or more advanced degrees, attending conferences or classes, meeting and networking with other aquatic professionals, or being part of a professional organization. This study added to the literature review by providing deeper examples of what specific areas should be studied in a college degree program by an aspiring aquatic professional.

The process of this study brought up the following recommendations for future research: (1) Quantitative research including surveys of other aquatic professionals to confirm and to develop a more comprehensive list of educational topics that should be included in a degree program for an aspiring aquatic professional, (2) quantitative research including surveys of college students from recreation degree programs regarding whether aquatics was covered in their recreational degree, and (3) quantitative research including surveys assessing potential interest in aquatics degree programs at a university.

Based on the results of this study, the following recommendations to the aquatics industry and community came up.

- (1) Push for aquatics-specific/applicable education in recreation degree programs
- (2) Take extra steps to reach out to students and promote aquatics as a career and show them educational routes that will help them succeed

## Appendix A

### *Interview Guide*

1. How did you come to work in the aquatics industry/decide to pursue that route?
2. What jobs did you work through to get to where you are now?
3. Tell me about your current position
4. What was your college degree in and why did you choose it?
5. What other formal education did you receive before going into aquatics as a profession?
6. Is there any formal education you have received throughout your career that has been applicable to your profession in aquatics? If so, describe it.
7. Do you think that your prior education was adequate to prepare you for a career in the aquatics industry?
8. Are there any areas specific to the aquatics industry that you wish you would have received more formal education in when beginning your career?
9. At this point in your career, are there any areas in the aquatics industry that you feel would be beneficial for you to receive more education?
10. Do you think that formal education (beyond a high school diploma) is important for those going into the aquatics industry? If so, why?
11. What kind of formal education exists currently, to your knowledge, that is specific to those going into aquatics as a profession?
12. What kind of education do you believe would benefit those going into aquatics as a profession and what do you think are the most necessary areas of study for those going into the aquatics profession?
13. What would you say the most beneficial certifications are for those in the aquatics industry?

14. How do you feel that “being certified” in something compares with actual knowledge levels for certifications in the aquatics industry?
15. Do you think college and university settings provide adequate education for someone who wants to go into aquatics as a profession?
16. What type of coursework in a college program is beneficial to those going into aquatics?
17. What are some hands-on experiences that are necessary for an education in aquatics?
18. What is your opinion on the overall industry-specific knowledge level of professionals in the aquatics industry today and what is the general consensus of other industry professionals, to your knowledge, of industry-specific knowledge levels of other employees in the industry? Do you think more is needed?
19. What is your opinion on the overall industry knowledge level of technology of professionals in the aquatics industry today and do you think more is needed?
20. What is your opinion on the overall industry knowledge level of operations of professionals in the aquatics industry today and do you think more is needed?
21. What is your opinion on the overall industry knowledge level of budgeting of professionals in the aquatics industry today and do you think more is needed?
22. What is your opinion on the overall industry knowledge level of staff development of professionals in the aquatics industry today and do you think more is needed?
23. What is your opinion on the overall industry knowledge level of pool water chemistry, pump room systems, and pool equipment of professionals in the aquatics industry today and do you think more is needed?
24. Other areas in the industry that need more knowledge?
25. Tell me a little bit about the growth in the aquatics industry.
26. How have educational needs changed throughout this growth?



27. Do you think that educational opportunities for those going into aquatics as a profession have kept up with the growth in the aquatics industry?
28. What are the biggest barriers to receiving industry-specific education applicable to the aquatics industry is for college students and for professionals?
29. Do you have anything else to add on this topic?

## Appendix B

*Demographic Information of Participants*

Measure	Item	Count	Percentage (%)
Gender	Male	2	20
	Female	8	80
Education	Undergraduate	4	40
	Masters	6	60
Location	Arkansas	1	10
	Texas	8	80
	Florida	1	10
Job title	Aquatics Superintendent	1	10
	Recreation Complex Supervisor	1	10
	Director of Parks and Recreation	1	10
	Assistant Recreation Services Manager	1	10
	Aquatic Supervisor	1	10
	Operations Manager	1	10
	Aquatic Maintenance Manager	1	10
	Customer Relationship Manager	1	10
	Marketing Manager	1	10
	Athletics and Aquatics Supervisor	1	10
Job type	Public Sector	8	80
	Private Sector	2	20

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