International Journal of Aquatic Research and Education

Volume 12
Number 1 *Vol. 12 Issue 1*

Article 9

9-17-2019

A Competency Analysis of Waterpark Aquatic Professionals

Christopher A. Crume
Denison University, ccrume@hotmail.com

William D. Ramos
Indiana University - Bloomington, wramos@indiana.edu

Follow this and additional works at: https://scholarworks.bgsu.edu/ijare

 Part of the Educational Assessment, Evaluation, and Research Commons, Health and Physical Education Commons, Leisure Studies Commons, Outdoor Education Commons, Public Health Commons, Sports Management Commons, Sports Studies Commons, and the Tourism and Travel Commons

Recommended Citation

Crume, Christopher A. and Ramos, William D. (2019) "A Competency Analysis of Waterpark Aquatic Professionals," *International Journal of Aquatic Research and Education*: Vol. 12 : No. 1 , Article 9.
DOI: 10.25035/ijare.12.01.09
Available at: https://scholarworks.bgsu.edu/ijare/vol12/iss1/9

This Research Article is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in International Journal of Aquatic Research and Education by an authorized editor of ScholarWorks@BGSU.

A Competency Analysis of Waterpark Aquatic Professionals

Cover Page Footnote

This article would not have been possible without the additional support of Dr. Craig Ross and Dr. Sarah Young. Not only did they both serve on the thesis committee upon which this article is based, but their efforts to provide data for this article made a tremendous difference.

This research article is available in International Journal of Aquatic Research and Education:
https://scholarworks.bgsu.edu/ijare/vol12/iss1/9

Abstract

The purpose of this study was to further the knowledge base in the aquatics field and assist in the development of universal standards to ensure that competent managers are employed at waterpark type venues. Until recently, thanks in part to the establishment of the Model Aquatic Health Code (MAHC 2014), universal standards did not exist in aquatics. The development of standards in the field will help to ensure continuity in policies among all facility types, properly trained professionals, and ultimately safer environments for participants. Using a pair of five-point Likert scales to sample 600 aquatic professionals, this study sought to discover what key competencies were needed by waterpark professionals and which competencies needed further development specifically for waterpark professionals. Extrapolated from the results, we observed risk management was crucial to operations of waterparks and that programming was an area to examine further.

Keywords: aquatics, competencies, recreation, management, waterpark

Background

Programming in aquatics has been considered one of the fastest growing trends in recreation with waterparks leading the way as far back as the early part of this century (Griffiths, 2003). According to the American Red Cross, waterparks are defined as "aquatic theme parks with attractions, such as wave pools, speed slides and winding rivers" (American Red Cross Lifeguard Training, 2012, p. 279). As recently as 2014, the Model Aquatic Health Code, strove to give guidance to all aquatic venue types, including waterparks. To effectively operate these expansive and ever-changing facilities, highly trained professionals are needed. In the past, most aquatic professionals had not had any formal training, such as a college degree. Knowledge of aquatics for entry level professionals typically had been gained through community resources, conferences, sharing of professional knowledge, but, more often than not, through trial and error on the job. The need for educational resources for professionals had been recognized as early as 1986 when Thomas (1986) first conducted a study titled, *Survey of Aquatic Education in 140 Colleges and Universities in the U.S.* This study showed that education in aquatic programming was a desired qualification sought by professionals. Subsequent replications of the survey by Fawcett (2001) and Crume (2005) have shown growth in this area as well.

It is widely accepted that aquatic professionals have a body of knowledge that is unique; however, there have been no formal guidelines established on what personnel in aquatics need to know to be considered competent in the field. Moore (2001) discovered that aquatic professionals in the National Intramural-Recreational Sports Association (NIRSA) and the National Recreation and Parks

Association (NRPA) deemed a certain set of skills to be the necessary competencies needed for the job as well as areas for further professional development. While this research addressed the needs of those in the broader scope of aquatics, it fell short of addressing the needs of aquatic professionals in the specific area of waterparks. Currently, no other studies have been conducted that delve into the realm of waterpark competencies. A review of the current literature helped to identify the rationale for recognizing the need for these competencies to be developed.

Jamieson (1980) has shown that recreational sports professionals possess a unique set of professional competencies. Yet when looking more closely at specific program areas (informal, intramurals, and clubs) competencies for professionals have not been well defined. The fact that several recreational sport organizations offer similar trainings and certification programs that focus on areas of aquatic specialization illustrates the need for these defined competencies. It is up to each professional to select which specialization or certification program best meets their needs.

One of the most influential competency studies conducted in the field of recreational sports was conducted by Dr. Lynn Jamieson (1980). This study determined the specific competences required by three different levels of recreational sports professionals in three different settings. Results from the work revealed a list of competency groupings that were said to be essential to all recreational sports professionals, no matter in which setting they had been employed. These competencies included: (a) business procedures, (b) communications, (c) facility/maintenance, (d) governance, (e) legality, (f) management techniques, (g) officiating, (h) programming techniques, (i) philosophy, (j) research, (k) safety/accident prevention (risk management), and (l) sports science (kinesiology). The study was then further broken down into the competencies most needed for entry-level, mid-level, and top management-level professionals with certain competencies standing out for each level.

Moore (2001) conducted what was considered to be the first competency study focusing specifically on professionals in the aquatics field. Study results concluded that no universal standards existed for the competencies needed to be a professional in aquatics. Various organizations offered specialized training; however, there was no defined basic training program for professionals seeking to become well versed. In the past, aquatics professionals have typically come from the field of parks and recreation, recreational sport management, or physical education. Because of the unique aspects that the aquatic environment possesses over land-based environments, a need exists for specialization.

For his study, Moore employed a survey methodology which has been determined to be most suited to competency research by Rahni (1986). Employing a survey instrument, 500 aquatic professionals were chosen at random, 250 from the National Intramural-Recreational Sport Association (NIRSA) and 250 from the National Recreation and Parks Association (NRPA). Moore's results were helpful in determining the first base set of competencies for aquatics professionals. Moore's study found that risk management was the most important competency category among both the NIRSA and the NRPA aquatics professionals, while fiscal management was the least important. It also demonstrated that an identifiable set of competencies do exist for aquatics professionals, but had not been written down to that point in time.

Method

Instrumentation

Jamieson (1980) determined that the survey/ questionnaire method was best for competency research. Jamieson indicated that by employing this method, "recreational sports practitioners will aid in the development of core competencies" (p. 32). With a return rate of 53.3% for the competency survey done by Jamieson and the study conducted by Moore receiving 42.6%, similar results for this study were desired, as a minimum, if not exceeding. Jamieson noted there are several advantages to using the survey tools. Some of the advantages included "a wide scope, accurate data, and standard results" (p. 40). Along with the advantages, there were also several disadvantages listed which included "time and cost, and a tendency to yield superficial results" (p. 40).

The first step in designing the current study was to determine the areas where aquatic professionals need competencies. Through Moore's (2001) study, the eight areas of competencies needed by aquatic professionals had previously been developed as:

1. Programming
2. Financial Management
3. Communication
4. Personnel Management
5. Management Skills
6. Facility Management
7. Risk Management
8. Technical Skills

The second step was to re-evaluate the survey instrument for face and content validity through a pilot study. To achieve this, the instrument was examined by a jury of six separate recreation professionals, three from the aquatic field and three from fields of recreation outside of aquatics. The rationale for this was to

gain perspective from a multitude of angles, thereby creating a more valid and reliable survey. Each professional was selected based upon their knowledge of the field and their willingness to assist the researcher. The pilot study was sent out following study approval from the university institutional review board.

As part of the pilot process, a paper survey with 105 competency statements was distributed to each professional in which they were to reply to three answer options. The answer options on the pilot instrument were: (a) Re-work Competency (coded as "R"), (b) Delete Competency (coded as "D"), and (c) Appropriate Competency (coded as "A"). There was also room made available for comments by reviewers. If a competency was identified by a majority of the jurors as needing to be re-worked or deleted, the statement was re-worded in a more precise manner or dropped in accordance with the recommendations.

Once the survey had been revised, the finalized instrument was developed in a manner that asked participants to rank each competency statement on a Likert scale so that the relevance of each statement could be determined in relation to whether the competency was perceived to be a needed competency for professionals and also whether that competency needed further development in the field. A pair of five-point scales were used in the tool following the model illustrated in Table 1.

Table 1. Survey scale example

Evaluates full time personnel.		Needed Competency 1 2 3 4 5	Needs Development 1 2 3 4 5
1	Least Important	Not needed or important at all	
2	Below Average Importance	Not important, used rarely	
	Average Importance	Useful, but not usually needed	
4	Above Average Importance	Used and needed regularly	
5	Most Important	Absolutely needed to perform duties	

Sampling Procedures

The sample size was selected based on the total number of professionals in the population of the World Waterpark Association member list (1097 members) which was obtained through permission of the current organizational president, Rick Root. Survey packets were distributed through the United States Postal Service following IRB approval to do research utilizing human subject (IRB Study #0611358) with each packet containing a mailing pack with paper questionnaire, a letter from the researcher indicating the purpose of the study, and a stamped return envelope. After a ten-day period, a post card reminder was sent to all 600 participants to encourage

them to complete the survey in the allotted amount of time. Two weeks after the original mailing was sent out, a follow-up letter with another questionnaire was sent to all participants who had not yet responded encouraging them to complete the survey tool. Each return envelope was coded to determine who had not yet completed the survey. All codes were destroyed at the end of the data collection period to protect the confidentiality of the participants. Those who responded in the proper time frame were included in the study.

Of the 600 surveys sent, a total of 73 surveys were returned completed with another 90 surveys sent to invalid addresses returned to the researcher which were discarded from the sample size. With 73 surveys returned, the response rate was 14.31%. Due to the seasonal nature of the waterpark industry, this study received a smaller response rate than initially desired.

Results

The largest group of respondents was derived from the 30 who self-identified as Managers which equated to 41.1% of total respondents followed by Directors and "Other" very close to that rate at 21.9% each. Respondents who indicated the category of "Other" self-identified with titles such as Owner, Operator, or Developer (see Table 2).

Table 2. Demographic Breakdown by Title

Title	Frequency	Percent	Cumulative Percent
Manager	30	41.1	41.1
Director	16	21.9	63.0
Supervisor	11	15.1	78.1
Other	16	21.9	100.0
Total	73	100.0	

Table 3 represents results indicating that of the 73 respondents to the survey, 66 indicated they were affiliated with the World Water Park Association (WWA) which equaled 90.41% of the total respondents. It was interesting to note that the National Recreation and Parks Association (NRPA) was highly represented with 25 respondents (34.25%) reporting membership in the NRPA. It should also be noted that being a member of the WWA was not a requirement of this study and approximately 10% of all respondents indicated that they had no direct connection to the WWA even though their information was recorded on the WWA distribution list.

Table 3. Demographic Breakdown by Professional Organization

Organization	Frequency	Percent	Cumulative Percent
WWA	26	35.6	35.6
NRPA	2	2.7	38.4
Other	3	4.1	42.5
WWA/NRPA	23	31.5	74.0
WWA/Other	17	23.3	97.3
NRPA/Other	2	2.7	100.0
Total	73	100.0	

With regards to training certifications, the largest group of waterpark professionals (36.6%) indicated that they utilized the American Red Cross for their lifeguard training needs. Jeff Ellis & Associates (JEA) ranked second at 33.8%. Interestingly, the National Aquatic Safety Company (NASCO) made up a majority of the "Other" certifications (see Table 4).

Table 4. Demographic Breakdown by Certifying Agency

Certifying Agency	Frequency	Percent	Cumulative Percent
ARC	26	35.6	36.6
JEA	24	32.9	70.4
YMCA of USA	1	1.4	71.8
Starguard	5	6.8	78.9
Other	3	4.1	83.1
ARC/JEA	4	5.5	88.7
ARC/YMCA	3	4.1	93.0
ARC/Star	1	1.4	94.4
ARC/Other	2	2.7	97.2
JEA/Other	1	1.4	98.6
Star/Other	1	1.4	100.0
Total less missing	71	97.3	
Missing	2	2.7	

Table 5 provides an overview of the top five competencies deemed important for each category as determined by respondents. All of the statements

in each category were above a 4.0 (out of 5) in the Needed Competency Mean (NCM) column.

Table 5. Top Competency Statements by Category

Financial Management	NCM	PDNM
Prepares/defends budget.	4.48	3.97
Manages the program budget to meet goals.	4.29	3.80
Prepares timely financial reporting statements.	4.10	3.57
Analyzes the program budget to meet future goals.	4.08	3.80
Monitors purchasing policies and procedures.	4.08	3.49
Programming	NCM	PDNM
Provides vision for program.	4.38	3.76
Establishes goals and objectives for program.	4.34	3.67
Develops strategies to meet goals and objectives.	4.26	3.66
Understands organizational/operational aspects of an aquatics program.	4.26	3.88
Monitors current trends in the aquatics field.	4.21	3.75
Risk Management	NCM	PDNM
Recognize equipment that has become a safety hazard.	4.70	3.95
Ability to recognize participants who are in distress	4.64	3.90
Ability to develop Emergency Action Plans for all facilities.	4.60	4.13
Recognizes accident trends and eliminates potential hazards	4.58	4.08
Follows Occupational Safety and Health Administration guidelines.	4.51	4.12
Communication	NCM	PDNM
Writes standard operating procedures, (policies and manuals).	4.43	4.03
Establishes various means of effective staff communication.	4.28	3.82
Prepares program reports for superiors.	4.13	3.46
Establishes positive long term relationships with outside user groups.	4.12	3.47
Develops approaches to effectively communicate with potential participants.	4.10	3.67

Technical	NCM	PDNM
Maintains current certification in Cardiopulmonary Resuscitation (CPR)	4.51	3.91
Graduated from High School or G.E.D.	4.46	3.82
Working knowledge of chemicals and their place in a facility.	4.45	3.98
Maintains current certification in first aid.	4.42	3.66
Maintains a valid pool operator certification.	4.34	3.87
Facility Management	**NCM**	**PDNM**
Ensures compliance with all state bathing codes regarding aquatics.	4.48	4.05
Enforces security guidelines for facilities.	4.42	3.89
Inspects facility for safety hazards.	4.40	3.87
Establishment of all facility policies and procedures.	4.38	3.90
Maintains facility schedule for smooth operation.	4.37	3.54
Personnel Management	**NCM**	**PDNM**
Daily supervision of employees.	4.62	3.95
Administration of employee disciplinary action.	4.50	3.98
Interview and hire applicants into needed positions.	4.48	3.79
Conducts in-service training for employees.	4.42	3.88
Keeps supervisor informed of successes and difficulties.	4.38	3.73
Management Skills	**NCM**	**PDNM**
Exercises effective decision-making skills	4.65	3.89
Effectively mediates problems that arise.	4.62	4.00
Develops plans for scenarios unique to the facility.	4.47	4.01
Effective at listening.	4.41	3.65
Utilization of time management techniques.	4.36	3.77

Note. NCM – Needed Competency Mean; PDNM – Professional Development Needed Mean

Table 6 shows the highest 20 mean scores from the entire survey data set for the Needed Competency Mean (NCM). These results indicate top competencies that waterpark professionals deemed as necessary to adequately perform the job.

Table 6. Top Competency Statements Ranked According to Needed Competency Mean Scores

Category	Competency Statement	NCM	PDNM
RM	Recognizes equipment that has become a safety hazard	4.70	3.95
MS	Exercises effective decision-making skills	4.65	3.89
RM	Ability to recognize participants who are in distress	4.64	3.90
PM	Daily supervision of employees	4.62	3.95
MS	Effectively mediates problems that arise	4.62	4.00
RM	Ability to develop Emergency Action Plans for all facilities	4.60	4.13
RM	Recognizes accident trends and eliminates potential hazards	4.58	4.08
T	Maintains current certification in Cardiopulmonary Resuscitation (CPR)	4.51	3.91
RM	Follows Occupational Safety & Health Administration guidelines	4.51	4.12
PM	Administration of employee disciplinary action	4.50	3.98
FAC	Ensures compliance with all state bathing codes regarding aquatics	4.48	4.05
FM	Prepares/defends budget	4.48	3.97
PM	Interview and hire applicants into needed positions	4.48	3.79
MS	Develops plans for scenarios unique to the facility	4.47	4.01
T	Graduate from High School of G.E.D.	4.46	3.82
RM	Keeps records on necessary certifications for appropriate staff	4.45	3.56
RM	Trains staff to recognize high risk activities	4.45	3.97
T	Working knowledge of chemicals and their place in a facility	4.45	3.98
C	Writes standard operating procedures, (policies and manuals).	4.43	4.03
FAC	Enforces security guidelines for facilities.	4.42	3.89

Note. NCM – Needed Competency Mean; PDNM – Professional Development Needed Mean For ease of reading this chart, the competency categories have been given a code. 1. Financial Management – FM, 2. Programming – P, 3. Risk Management – RM, 4. Communication – C, 5. Technical – T, 6. Facility Management – FAC, 7. Personnel Management – PM, 8. Management Skills – MS.

It should be noted that five of the top ten competency statements in Table 6 were representative of the need to provide assistance to waterpark participants in an emergency. Risk Management, Management Skills, and Personnel Management received the highest ranked skills among those who were surveyed. Financial Management, Communication, and Programming were shown to be of least importance with only one statement each in the top ten for Financial Management and Communication and no statements in the top ten for Programming.

The data in Table 7 represent the most important categories. Assignment of categories was accomplished by averaging the aggregate means of each of the categories in the Needed Competency Mean (NCM) column and then ranking them from highest aggregate mean to lowest aggregate mean.

Table 7. Most Important Competency Categories

Category	Aggregate Mean
Risk Management	4.48
Personnel Management	4.34
Management Skills	4.29
Financial Management	3.99
Communication	3.95
Facility Management	3.92
Programming	3.84
Technical	3.81

Note. Scores in Table 7 are aggregate mean scores based on the results of each statement in the Needed Competency Mean data.

It is interesting to note that the Financial Management category ranked fourth on this list. Moore (2001) found that this category ranked last among professionals surveyed from the National Intramural-Recreational Sports Association (NIRSA) and the National Recreation and Parks Association (NRPA) samples. This higher ranking for the Financial Management category could be due to the fact that waterparks were generally found more in the private sector and in business to make money. Many of these facilities were not attached to publically funded organizations such as a university or a city government. The funding for waterpark facilities most often comes from revenues generated at the parks and private investors.

Discussion

While risk management appeared as an obvious competency area that emerged with high importance, personnel management and general management skills also rated high on the most important scale. This meant that new professionals entering

waterpark settings need training and experience in supervising employees as well as the skills incorporated with decision-making, mediating problems, and good time management. Financial management competencies (i.e., budget preparation, managing budgets to meet goals, preparing financial statements) were also perceived as important to waterpark professionals. Mean scores for these competencies in financial management were higher than those of the professionals from the NIRSA and the NRPA organization samples that Moore (2001) studied. This could be due to the fact that waterparks are more revenue- and profit-driven by nature, so professionals working at these venues must focus more closely on the bottom line. This is compared to the NIRSA and NRPA settings where funding sources are more likely to be tax revenues, university budget allocations, and student fees. As a result, the professionals working in NIRSA and NRPA type settings were intuitively less likely to be concerned with financial management issues, making competencies in that area less important.

Another observation that emerged from this study was that competencies in the Programming area scored lower when compared to the work by Moore (2001). Programming is a primary focus in municipal and campus recreation settings which explained why the competencies in this area rated higher in Moore's study for professionals affiliated with the NIRSA and the NRPA. Waterparks are unique in that the attractions put into place are rarely changed and do not need a programmatic influence because waterparks by their design are inherently already programmed. An example of this would be fitness programming. Moore found that the NIRSA and the NRPA put a high value on fitness and instructional programming competencies. Ramos and Ross (2013) conducted a study that showed physical activity in a waterpark setting in youth ages 4-18 produced moderate and vigorous levels of physical activity and that different activity areas in a waterpark could produce differing levels of physical activity. Implications from these studies could lead to an increase in waterpark facilities being constructed as an alternative to traditional types of fitness activities (e.g., walking, swimming, weight lifting). It could also create a healthier lifestyle for many individuals as well as providing increased leisure. Competencies in waterparks are becoming increasingly more important as more attractions and parks are built each year.

Limitations

This study contained several possible limitations. Response rate was considered low for the applied statistical methods and for obtaining the most accurate and consistent results. The low response might be due to the survey tool being sent to the individual professionals instead of the venue, which may have resulted in surveys not being distributed if the individual no longer was employed at the venue. Also, the timing of the survey may have contributed to a lower than desired response rate. This survey was sent during the summer months to capture the

greatest number of participants, but it was also the busiest time for aquatic venues and the professionals who staff them. In addition, the survey has previously been used by Jamieson (1980) and Moore (2001). A need for further replication of the study to establish stronger validity and reliability of the instrument also exists.

Conclusions

Because of the high-risk nature of aquatics as well as waterparks, competent professionals are needed to facilitate and maintain these aquatic venues. The results of this research have shown that there were certain competencies that professionals regarded as important to gaining entry into the field. These competencies were noted in the research as the Needed Competencies. This research also looked at areas where Professional Development was needed by asking the current waterpark professionals what they perceived those items would be. As entry-level professionals continue on in the waterpark profession, more education and development would be needed. Each of the eight categories of this study found areas of development needed. These competencies should become the basis for curriculum development at the higher education level to begin to better prepare future professional to be successful in the area of waterpark management. By educating professionals based on these findings, safer and more effective programs will begin to emerge. With the Moore (2001) study looking at the NIRSA and the NRPA and this study looking at the WWA, the next step would be to utilize this survey tool to study aquatic professionals in the waterfront/beach field. This would give the field of aquatics a holistic look at what the core competencies should be for all aquatic professionals and for the specialized competencies needed for each branch of the field.

References

American Red Cross. (2012). *Lifeguarding.* San Bruno, CA: Stay Well.

Crume, C. (2005). [*Aquatics Programs in Higher Education*]. Unpublished raw data.

Fawcett, P. (2001). *NIRSA Aquatic Director's Handbook.* Corvallis, OR: NIRSA.

Griffiths, T. (2003). *The complete swimming pool reference* (2nd ed.). Champaign, IL: Sagamore Publishing.

Jamieson, L.M. (1980). *A competency analysis of recreational sports personnel in selected institutional settings*. Re.D. dissertation, Indiana University, United States – Indiana. Retrieved November 15, 2007, from ProQuest Digital Dissertations database. (Publication No. AAT 8120136).

Moore, M.L. (2001). *A competency analysis of aquatic professionals*. Unpublished master's thesis, Indiana University, Bloomington.

Rahni, M.A.A. (1986). Minimum professional competencies for prospective physical education teachers during undergraduate professional preparation. Ed.D. dissertation, Northwestern State University of Louisiana, United

States – Louisiana. Retrieved November 15, 2007, from ProQuest Digital Dissertations database. (Publication No. AAT 8911335).

Ramos, W.D., & Ross, C.M. (2013). Indoor waterpark: An examination of physical activity levels and use patterns of youth participants. *International Journal of Aquatic Research and Education. 7(3). 238-253.* doi: 10.25035/ijare.07.03.

Thomas, D.G. (1986). Survey of aquatic education in 140 colleges and universities in the United States. *National Aquatic Journal,* Summer, 10-11.