

# Needs Assessment for the Development of Archerymad Hat as an Alternative to Replace the Kisser Button in Archery

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**Abstract.** Sports play a crucial role in improving both the quality of life and athletic performance. One of the fastest-growing sports in Indonesia is archery, which not only enhances focus and concentration but also helps reduce stress. In archery, technical consistency is essential for achieving optimal results. One commonly used aid is the kisser button, but some athletes find it uncomfortable to use. Therefore, this study aims to conduct a needs assessment for the development of the Archery MAD Hat as an alternative tool for maintaining consistency in archery. The research follows the Borg and Gall development model with a waterfall approach, involving a literature review, field studies, product design, expert validation, and initial trials. The researchers collected data through questionnaires distributed to 15 respondents, including archery experts, coaches, and athletes. The needs assessment results indicate that wearing a hat during archery is already a common practice and provides functional benefits, particularly in reducing visual disturbances caused by light. The majority of respondents also expressed the need for an alternative aid to the kisser button that is more comfortable and can enhance shooting consistency. Based on the study findings, the development of the Archery MAD Hat has the potential to become an innovative solution for improving archery performance, especially for beginners. The product offers greater comfort than the kisser button and helps athletes maintain consistent posture and technique during shooting.

**Keywords:** Archery; kisser button; needs assessment; Archery MAD Hat; technical consistency.

## INTRODUCTION

According to author [1], sports play a vital role in fostering national pride, aligning with Law No 3 of 2005 on the National Sports System, which regulates the continuous development and promotion of sports. Sports serve four primary purposes: recreation, education, fitness, and achievement.

One rapidly growing sport in Indonesia is archery. Initially used for hunting, archery has evolved into a popular Olympic sport that enhances focus, concentration, and stress management. Over the past six years, archery has experienced significant development in Indonesia, marked by an increasing number of archery clubs, extracurricular programs in schools, and public archery facilities.

Archery requires precision, strength, and endurance. Several factors influence an archer's performance, including technical skills, physical fitness, and mental preparedness [2]. Authors [3] further emphasise that accuracy and precision in archery depend on technique, physical condition, psychological factors, and bow tuning.

In international competitions, various types of bows are used, including recurve and compound bows. Additionally, archery requires standard equipment, including bows, arrows, protective gear, sights, and stabilisers. One commonly used accessory is the kisser button, an anchor reference tool that helps archers maintain shooting consistency. However, not all archers choose to use this tool in their technique [4]. Based on this background, the question arises: what is the

needs assessment for the development of the Archery MAD Hat?

This study *aims* to explore the needs assessment for the development of the Archery MAD Hat.

## METHOD

This study employs the author's [5] development model using the waterfall approach in its development stages. This model consists of ten key steps: research and data collection, planning, product draft development, initial field testing, initial product revision, main field testing, revision based on main testing results, field implementation testing, final product revision, and dissemination and implementation. The strength of this model lies in its ability to produce highly validated products while fostering continuous innovation. However, its weaknesses include a relatively complex process, a lengthy timeline, and high resource requirements.

In this study, the authors' [5] development model is used to develop the Archery MAD Hat as an alternative to the kisser button in archery. The process involves several main stages. The initial stage includes data collection through literature reviews and field studies to identify athletes' needs and assess the feasibility of the product. Next, the planning stage involves designing a product that functions similarly to the kisser button. The product development stage consists of creating a model based on collected materials, expert validation, and initial testing through questionnaires and observations with athletes and coaches. The questionnaire used in this study is a closed-ended type, where respondents are required to select only one of the provided answer choices. Below is the questionnaire framework, which will assess the safety, benefits, and advantages of the Archery MAD Hat product [6].

Table 1 – Questionnaire Framework

No	Criteria	Assessment Indicators
1	Originality	Innovation and creativity Novelty of design Concept creativity Development potential Variety of supporting tools

No	Criteria	Assessment Indicators
2	Safety	Impact on technique Safe usage during practice Material standards Risk reduction of errors Technical consistency without injury
3	Usefulness	Shot consistency Technical references (anchor point) Improvement in shooting results Suitability for beginners User focus
4	Excellence	Economical price Unique features Additional useful features Comparison with kisser button User experience

The questionnaire consists of a list of statements accompanied by a rating scale used to evaluate expert validation in archery, as well as in small-scale and large-scale trials. The questionnaire employs a Likert Scale with five response options: Very Good = 5, Good = 4, Fair = 3, Poor = 2, Very Poor = 1.

Table 2 – Likert scale

No	Answer	Score
1	Very Good (VG)	5
2	Good (G)	4
3	Fair (F)	3
4	Poor (P)	2
5	Very Poor (VP)	1

## RESULTS AND DISCUSSIONS

The researcher distributed a questionnaire via Google Forms to 15 respondents – archery experts, provincial board members (Pengprov), coaches, and archers – to efficiently collect data directly from relevant sources. The results of this assessment serve as a crucial foundation for developing the Archery MAD Hat, ensuring that the product meets the needs and expectations of the archery community [7]. The results of the needs assessment are presented in Table 3 below.

Table 3 – Needs Assessment Questionnaire Results for Archery MAD Hat (in Indonesian)

No	Nama	Asal Klub	Status	Pertanyaan										
				1	2	3	4	5	6	7	8	9	10	
1	ZR	UBBG	Pakar panahan Pengprov	√	X	X	√	X	√	√	√	√	X	√
2	SF	Ata Lanta Aceh Besar	Pengprov	√	√	X	√	√	X	√	√	X	√	√
3	IR	Pengprov	Pengprov	√	X	√	√	√	√	√	√	X	X	√
4	MUH	Ata Lanta Aceh Besar	Pengprov	√	√	√	√	X	X	√	X	X	√	√
5	GR	Pelatih PON Aceh	Pelatih	√	X	√	√	X	√	√	X	X	√	√
6	MZ	Perpani Kota Banda Aceh	Pelatih	√	X	√	√	√	X	√	X	X	X	X
7	M L	Ata Lanta Aceh Besar	Pelatih	√	√	√	√	X	√	√	X	X	√	√
8	RI	Ata Lanta Aceh Besar	Pelatih	√	√	√	√	√	X	√	√	X	√	√
9	MUN	Ganesa	Atlet	√	√	X	√	X	X	√	X	X	X	X
10	MOH	Archery Club Ganesa	Atlet	√	X	√	√	√	X	√	X	X	√	√
11	MOZ	Archery Club Ata Lanta Aceh Besar	Atlet	√	√	√	√	√	X	X	√	X	√	√
12	RN	Ata Lanta Aceh Besar	Atlet	√	√	√	√	√	√	√	X	X	X	√
13	MR	UBBG	Atlet	√	X	√	√	√	√	√	√	X	X	√
14	LS	Abu Lam U Archery	Atlet	√	√	√	√	√	X	X	X	X	X	√
15	DR	Sagena Archery Bireuen	Atlet	√	√	√	√	X	X	X	X	X	X	X
<b>Jumlah</b>				<b>15</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>9</b>	<b>6</b>	<b>11</b>	<b>4</b>	<b>0</b>	<b>12</b>	

This scale allows for a structured assessment of the Archery MAD Hat's feasibility, effectiveness, and advantages.

Based on the collected data, all respondents answered "YES" to the first question in Table 2; this indicates that all archers involved in the needs assessment frequently wear hats while practising or competing. This finding suggests that wearing a hat is already a common habit among archers due to various factors such as comfort, sun protection, or its integration as part of standard equipment. The alignment with existing habits and the added benefits designed to enhance archery performance reinforces the relevance of developing the Archery MAD Hat.

For the second question regarding whether wearing a hat helps in archery, responses were mixed. Nine respondents answered "YES," indicating that they perceived benefits from wearing a hat while shooting. Meanwhile, six respondents answered "NO," suggesting that they do not experience a significant advantage from wearing a hat. Factors such as personal preference, past experiences, or even the type of hat used could influence these differences in opinion. This insight underscores the importance of designing the Archery MAD Hat in a manner that provides tangible benefits, such as maintaining a consistent head position and enhancing shooting accuracy.

Regarding the third question on whether wearing a hat increases confidence in archery, 12 out of 15 respondents answered "YES," showing that

most feel a psychological boost from wearing a hat while shooting. However, three respondents answered "NO," indicating that not all archers feel a confidence increase from wearing a hat; this suggests that while there are psychological benefits for most individuals, some may not experience the same effect. This finding is crucial for developing the Archery MAD Hat, which should not only be functional but also provide comfort and confidence to its users. For the fourth question about whether hats help prevent visual disturbances such as glare, all respondents answered "YES." The findings confirm that wearing a hat provides a practical advantage in protecting the eyes from light-related distractions, which is particularly important in archery, where clear vision and sharp focus are crucial for achieving high accuracy.

In the fifth question about whether a hat affects an archer's technique and posture, nine respondents answered "YES," while six answered "NO." The responses suggest that most respondents believe wearing a hat has a significant impact on their technique and posture. However, some feel it has no effect, whether positive or negative, on their form while shooting.

Regarding the sixth question on whether wearing a hat helps beginner archers maintain consistency, responses varied. Six respondents answered "YES," indicating they believe wearing a hat helps beginners maintain consistency in shooting. However, nine respondents answered "NO," meaning that most do not see a significant effect of hats on the consistency of beginner archers; this suggests that while some recognise benefits, the majority feel that hats do not play a crucial role in maintaining consistency. This insight is essential for developing the Archery MAD Hat, emphasising the need to ensure that the product genuinely enhances consistency in posture and technique for beginner archers.

For the seventh question on whether archers have used consistency aids like the kisser button, 11 respondents answered "YES," while four answered "NO." The results indicate that the majority of archers are familiar with and have used a kisser button to maintain consistency. On the other hand, some archers have never used such aids, possibly due to personal preference, a lack of information, or the belief that they are not necessary. This finding is crucial for developing the Archery MAD Hat, as it highlights a demand for consistency aids among archers. The product

can be designed to serve a similar function to the kisser button but more comfortably and innovatively, appealing to both archers familiar with kisser buttons and those who have never used them.

For the eighth question, regarding whether the kiss button is distracting while shooting, four respondents answered "YES," while 11 answered "NO." According to the responses, 11 out of 15 participants do not find the kisser button disruptive and can experience its benefits without any issues. However, four respondents reported discomfort, citing reasons such as difficulty adjusting to it, the risk of minor injuries, and an unpleasant odour after prolonged use; this highlights an opportunity for the Archery MAD Hat to be developed as a more comfortable and non-intrusive alternative that still serves the same purpose – helping maintain head position and shooting consistency.

For the ninth question on whether the kisser button is mandatory for archers, all respondents answered "NO." The responses indicate that none of the respondents consider the kisser button an essential piece of equipment. While it can help maintain head position and shooting technique, respondents do not view it as a necessary component for all archers; this is crucial for the development of the Archery MAD Hat, which should not be marketed as an obligatory tool but rather as an innovative option that provides additional benefits more comfortably.

The respondents answered the final question on developing an alternative to the kisser button to help beginner archers improve consistency, with 12 out of 15 expressing strong support for creating new consistency aids. Meanwhile, three respondents answered "NO," possibly believing that current tools are sufficient or that a new development is unnecessary. This response strongly supports the Archery MAD Hat as a viable alternative to the kisser button. It confirms that the archery community seeks a more user-friendly consistency aid, particularly for beginners. The Archery MAD Hat is designed to address this need by offering a solution that improves both performance and user experience.

The needs assessment results indicate that wearing a hat is common among archers and is perceived as beneficial in various aspects, including boosting confidence and reducing visual distractions. However, most respondents do not consider the kisser button essential and believe that

developers should create a new, more comfortable, and practical consistency aid [8].

This study found that wearing a hat is a widespread habit among archers. From the needs assessment involving 15 respondents, all confirmed that they frequently wear hats while shooting; this suggests that hats are not just accessories but have functional benefits, such as sun protection and increased comfort during practice and competition. Additionally, most respondents stated that wearing a hat boosts their confidence, highlighting its psychological impact on performance [9].

Furthermore, the findings indicate differences in opinion regarding the effectiveness of hats in improving shooting performance. While most respondents agree that hats help reduce glare, only some believe they directly contribute to technique and posture [10]; this suggests that the benefits of hats in archery are subjective, depending on individual experiences and preferences. Therefore, the Archery MAD Hat should be developed not just as a protective accessory but as a functional replacement for the kisser button, considering ergonomics and comfort to appeal to a broader range of archers.

Additionally, the study found that the kisser button is not considered essential by all respondents. Although most archers have used it, some find it uncomfortable or even distracting. Reported issues include adjustment difficulties, minor injuries, and odour from prolonged use; this presents an opportunity for the Archery MAD Hat to be designed as a more comfortable, non-intrusive alternative for archers who want to maintain shooting consistency without the drawbacks of traditional kisser buttons.

The strong demand for innovation in consistency aids is evident from the needs assessment, where the majority of respondents expressed interest in an alternative to the kisser button. The Archery MAD Hat is expected to meet this demand by integrating the benefits of a hat with a consistency aid, providing a practical, comfortable, and effective solution for archers – especially beginners [11].

By incorporating feedback from athletes, coaches, and archery experts, the development of this product should prioritise accuracy, comfort, and ease of use to become an effective tool for enhancing shooting consistency and overall performance.

## CONCLUSIONS

This study demonstrates that the use of hats in archery is beneficial on a daily basis, particularly in enhancing comfort, reducing visual distractions, and boosting confidence. Meanwhile, the kisser button is not considered essential by all archers, and some find it uncomfortable to use.

Therefore, there is a need for a more practical and comfortable consistency aid. The Archery MAD The developers have created the hat as an innovative alternative that combines the function of a hat with a consistency aid. They expect it to improve the performance and experience of archers, especially beginners.

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