

METHODS OF EFFICIENT MOTIVATION INCREASE FOR SWIMMING TRAINING PRACTICES

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Summary

The aim of this paper was to examine the influence of goal setting interventions in combination with different kinds of feedback on swimming practice attendance. For this purpose, on a group of 16 respondents (swimmers), with the baseline period, two interventions were applied: goal setting with private feedback (first intervention) and goal setting with public posting (second intervention). By applying One – way repeated measures ANOVA and post hoc testing with Bonferroni correction it was found that the attendance in the second intervention ($M = 9.75$; $SD = 2.08$) was significantly higher than in the baseline period ($M = 7.69$; $SD = 2.02$); $t = 2.06$, $p < .01$. Furthermore, the second and first intervention ($M = 8.19$; $SD = 2.61$) also significantly differ in favour of the second intervention, ; $t = 0.56$, $p = .042$. No significant differences were found between the first intervention and baseline period. The results were explained with the benefits of public posting. Public posting enabled easier understanding of the goal concept, continuous feedback, social comparison and social facilitation. These conditions enabled that respondent perceive the goal as important, that they accept it and put in effort in its achievement. This paper's results have implications on coaching praxis.

Keywords: goal, feedback, public posting, attendance, feedback

INTRODUCTION

Motivation is usually defined as a state which encourages, directs, represses and finishes and certain behavior (Petz, 1987; Reeve 2010). This definition implies two important points. Firstly, the direction indicates the purpose that the behavior has. Secondly, energy implies the strength of the behavior (Reeve, 2010). Theories that try to explain what motivates people for a certain behavior are called need based approaches to motivation (Petz, 1987). Goal theory is pointed out to be one of the most accepted and applicable need based motivation theory (Locke and Latham, 1979, 1985, 1990, 2002, 2013). Goal setting represents a cognitive theory of motivation which explains why are certain people better in work assignments than others (Locke and Latham, 1990; as cited in Locke and Latham, 2013). It is based on the biological functioning of all living beings. Namely, all living organisms must engage in goal – oriented activities in order to survive.

The core of the goal setting theory is the *goal* construct. Locke and Latham (2013) define goals as intentions or objects to which the activity is directed. Goals, as defined by these authors, have two important characteristics: content and intensity. Content relates to the outcome or results which the behavior aims to achieve, while intensity represents effort put in the achievement of the goal. Goals give meaning an individual's behavior as he invests a certain amount of energy to achieve them. In this way, as Locke and

Latham claim, goals represent one of the most important motivators of human behavior.

Results from over 400 empirical studies, on which this theory is based, consistently imply that the highest effort and work results are being achieved by setting moderately difficult, specific goals (Locke and Latham, 2013). These authors point out four mechanisms which explain the influence of difficult, specific goals on an individual's work performance:

1. *Choice or direction.* A specific and difficult goal directs an individual's attention toward activities which are relevant for its achievement. Furthermore, this kind of goal activates the knowledge and skills which are needed for goal achievement.
2. *Effort.* When an individual chooses a goal, in order to achieve it he will invest a certain amount of effort. The effort is proportional to the difficulty of the goal. Therefore, more difficult goals ask for higher effort.
3. *Persistence.* A specific, difficult goal leads to more time invested in it's achievement. These goals require more time resources than easier, "do your best" goals.
4. *Knowledge and task – solving strategies.* When it comes to complex goals, the individual has to have knowledge and skills which are required to achieve them. Setting specific goals in complex work situations can lead to the

production of new task – solving strategies.

For the process of goal setting to be productive, goals have to have certain characteristics (e.g. specificity, measurability, moderate difficulty, etc.), be accepted as achievable and be followed by timely feedback. Furthermore, for these interventions to be efficient, the individual has to know how close, in a certain moment, he is to goal achievement. Goals with feedback carry an emotional meaning and have important motivational implications. As a person is closer to goal achievement (and has verifiable feedback at the same time), motivation for goal achievement becomes higher (Petz, 1987). Feedback can be derived from the task itself, but it is mostly given by external agents like other people in organizational and sport environment (Larson, 1984).

The way the feedback is presented has a great influence on its efficiency. Feedback can be presented in writing or orally, individually or in a group, private and public. It seems that group, public feedback has the most effect. Public presentation of feedback is usually called public posting. Public posting refers to all situations in which the individual work performances of all employees are presented in a way that all employees and other relevant individuals can see them (Nordstorm, Lorenzi and Hall, 1990). When the individual's performance is posted, the importance of reinforcement becomes higher (in the case that high performance is acting as reinforcement). Consequently, behaviors which lead to reinforcement become more frequent (Quinn, Miltenberger, Abreu and Narozanick, 2017).

As a behavioral intervention, public posting was successfully used in experimental (Smith and Lee, 1992; Hayes et. al., 1985; Lerner and Locke, 1995), educational (Lyman, 1984; Reitman, Murphy, Hupp and O'Callaghan, 2004; Perrin, Fredrick and Klick, 2016), work (Van der Hoek, Groeneveld and Kuipers, 2016; Hutchinson, Jarman and Bailey, 1980, Austin, Olson and Wellisley, 2001), **sport conditions** (Quinn, Miltenberger, Abreu and Narozanick, 2017; McKenzie and Rushall, 1974; Brobst and Ward, 2002; Ward and Carnes, 2002, Galvan and Ward, 1998; Ward, Smith and Sharpe, 1997), in everyday situations like frequency of walking increase (Earny and Bungum, 2004) and decrease in driving speed (Van Houten, Nau and Marini, 1980). Van Houten (1980; as cited in Ward, 2011) presents two reasons for the efficiency of public posting. Firstly, feedback is used for performance encouragement and enhancement. Secondly, public posting enables that certain public expectations become norms for behavior in certain instructional environment.

Most public posting studies combine goal setting with verbal feedback (Ward, 2011) Ward (2011) considers that a goal gives an explicit, clear criterion for successful performance while public posting presents a technology which makes individuals' performances public and gives feedback. The same author points out that verbal feedback is given to confirm what was already shown in public posting. However, verbal feedback can sometimes act as social reinforcement. In a study with American football players Smith and Ward (2002) have shown that most players and coaches prefer goal setting with public posting.

Public posting was shown to be useful in sport and recreation environment. Public performance posting was used to increase the attendance and performance on swimming practices (McKenzie and Rushall, 1974), to increase the training performance of female soccer players (Brobst and Ward, 2002), to decrease unsportsmanlike behavior in tennis players (Galvan and Ward, 1998), increase of practice and game performance of American football players (Ward, Smith and Sharpe, 1997), increase the movement precision in professional dancers (Quinn, Miltenberger, Abreu and Narozanick, 2017), to increase the practice and game performance of college soccer players (Smith and Ward, 2006) and to increase the time spent on recreational walks (Earny and Bungum, 2004).

It can be assumed that intervention based on goal setting theory can have a certain influence on the attendance of swimming practices. Goal setting combined with private feedback should be more efficient than the control situation. The combination of goal setting and public posting should be more efficient than both the goal setting and individual, private feedback as well as control period.

METHOD

Sample

A purposive research sample consisted of 16 swimmers (12 boys and 4 girls) who were members of a local swimming club. The average sample age was 9,5 years (SD=1.67, Min=7, Max=13).

Instruments

A simple check – list for recording training attendance of swimmers was constructed for the purpose of data collection. The check – list was formed as a table, consisted of a list of sample respondents (columns) and 36 practice sessions (rows). The practice attendance was recorded as 1, while absences were signified with 0.

In the second part of the experiment the same check – list was presented to the respondents on a paper A format (841 x 1188) in a way so that

the after mentioned list could be visible to every respondent on every training session. During feedback every respondent was given a card with the set goal being written on it. The main purpose of this card was to act as an reminder of the set goal.

Procedure

The study was conducted during December 2017. and March 2018. A total of 36 training sessions (12 sessions for the control period, 12 for application of the goal setting + individual, private feedback intervention and 12 for application of the goal setting + public posting intervention) was included in the study. A detailed description of the control and two experimentation situations follows.

Control period – no intervention. During the first twelve sessions, the attendance of respondents was recorded without the application of any intervention. The respondents did not set goals nor did the have any insight in their attendance.

Goal setting + private feedback. Od the 12th session of the control period, each swimmer had had an individual interview with the coach. After the feedback of the attendance of last 12 sessions was privately presented by the coach, every respondent was given the following instruction:

“Together we will try to increase your training attendance. I would like for you to decide how many practices you would like to attend the following month (the maximum number is 12 and the minimum 0). The number of practices represents the goal you are trying to achieve next month. You should aim to attend more practices than last month. Your goal should not be too difficult (are you sure that you can attend all 12 practices). Now, I am going to write your goal on

this card so it can serve as a reminder of the number of practices you would like to attend.” The instruction was given by the coach in an attempt to ensure that the respondents accept (internalize) the goal. Namely, the coach represents a person of trust and confidentiality to the respondents. Furthermore, the respondents were asked to participate in the goal setting process (by determining their practice attendance goal). Finally, it was emphasized that the respondents do not set too difficult, unachievable goals. During the next 12 sessions three coaches were recording the practice attendance. During this period, the respondents did not have any insight in their attendance.

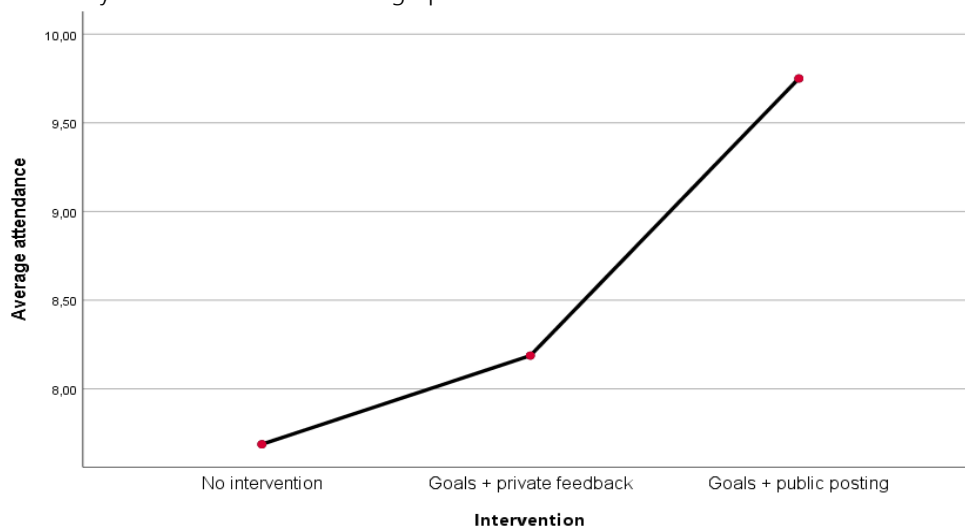
Goal setting + public posting. On the 12th session of the first experimental condition individual interviews with the respondents were conducted. The respondents set goals with the help of the after mentioned instruction. Instead of getting a card, in the end of each interview, each respondent was shown the attendance table, and their goals were recorded in the same table. Furthermore, the respondents got an extra instruction:

“Now I am going to write down your goal in this table. At the beginning of each practice this table is going to wait for you so you can see how close you are to achieving your goal”.

During the last 12 sessions coaches continued to record attendance. The respondents had insight in their own attendance at the beginning of every session. The respondents were asked to gather around the table (check – list) for a few minutes so that they can analyze their attendance together.

RESULTS AND DISCUSSION

The impact of every intervention is show on graph 1.



Graph 1. Average practice attendance for the control period and 2 interventions.

It can be noticed from the graph 1 that the lowest average practice attendance was recorded in the control period with no interventions ($M = 7.69$; $SD = 2.02$). During the first intervention (goal setting with private feedback) the average attendance increased to a slightly more than 8 practices ($M = 8.19$; $SD = 2.61$). The attendance recorded in the second intervention was the highest. The respondents attended slightly less than 10 practices on average ($M = 9.75$; $SD = 2.08$).

To compare the impacts of the interventions on average practice attendance a one – way repeated measures ANOVA was used. A

statistically important difference in attendance for the three after mentioned conditions were found, Wilks' Lambda = 0,464, $F(2, 14) = 8.095$, $p < .01$. Therefore, the control period, the first and second intervention differ significantly based on average training attendance.

To compare the after mentioned conditions, post hoc testing with the Bonferroni correction was conducted. Control situation was compared with the first and second interventions, the first intervention was compared with the second and control situation and the second intervention was compared with the first and control situation. The results of post hoc testing are shown in table 1.

Table 1. Bonferroni post hoc comparison between the control period, the first and the second intervention.

Multiple Comparisons	t	95% IP				
		Std. Error	Sig.	Lower Bound	Upper Bound	
Without intervention (1)	2	-0.5	0.42	.752	-1.63	0.63
	3	-2.06**	0.5	.003	-3.4	0.73
Goals + private feedback (2)	1	0.5	0.42	.752	-0.63	1.63
	3	-1.56*	0.56	.042	-3.08	0.5
Goals + public posting (3)	1	2.06**	0.5	.003	0.73	3.4
	2	1.56*	0.56	.042	0.05	3.08

* $p < .05$ ** $p < .01$

Table 1. shows that the second intervention ($M = 9.75$; $SD = 2.08$) differs significantly from the control period ($M = 7.69$; $SD = 2.02$); $t = 2.06$, $p < .01$. Furthermore, the second intervention also differs significantly from the first intervention ($M = 8.19$; $SD = 2.61$); $t = 0.56$, $p = .042$. The first intervention and the control period do not differ significantly. Hence, goal setting and public posting had more impact on average practice attendance increase than goal setting with private feedback and the control period.

By examining the impact of interventions based on goal setting theory in sport, it was determined that the combination of goal setting and public posting significantly impacts the increase of practice attendance on this research sample. The results of this study verify the results of previous studies that were based on similar research questions (Koufoudakis, Erwin, Beighle and Thornton, 2016; Brobst and Ward, 2002; Mellalieu, Hanton and O'Brien, 2006; Tzetzis, Kiomourtzoglou and Mavromatis, 1977; Simoes, Raposo, Silva and Fernandes, 2012; Boyce et al., 2001). As with the results of previous studies, this study also confirms the application

of the after mentioned interventions in sport and recreation.

The results can be interpreted from two aspects. Firstly, the study sample consisted of relatively young respondents (average age was 9.5 years.). By taking their developmental characteristics (especially cognitive development) into consideration, it is possible that the respondents did not adequately understand the goal concept. If the goal concept remains unclear, there is low probability that the goal will be accepted and severe as a motivator of behavior. It is known that respondents' goal acceptance is an important condition for the efficiency of goal setting interventions (Locke, 1991; Erez and Zidon, 1984). The second explanation for failure of goal setting and private feedback can be found in behavioral and social – cognitive learning theories. Behavioral theories imply that behavior that is not reinforced will occur less in the future. If feedback can be understood as a type of reinforcement (Bandura and Locke, 2003) which motivates behavior for goal achievement, then the lack of continuous

feedback can impact the extinction of said behavior. The respondents in the first interventions did not have continuous (nor public) access to feedback, so it was possible that the goal was estimated as not important enough to engage in it's achievement. Further more, private feedback offered a lack of social comparison with other respondents' performance. The lack of comparison between others' and one own's performance could influence of the goal importance decrease. Finally, the respondents knew da they set a certain goal, but they do not have any insight that they others are assessing them .

It seems that the second intervention makes up for all disadvantages of private feedback. It was determined that the combination of goal setting and public posting gives the best results. Average practice attendance during the second interventions was statistically higher when compared with the control period and first intervention. Firstly, it is possible da public posting enables easier understanding of the abstract goal concept. By clearly showing steps which are needed for goal achievement, the goal concept becomes more simplified and concrete. Secondly, public posting creates a social context which can intensify goal – oriented behavior. Public posting enables continuous performance feedback. The respondents more often receive insight into their performance and the steps needed to be taken for goal achievement. Thirdly, public posting enables social comparison. If comparison of one own's with others' behavior is considered as a type of social feedback, then:

1. The respondents understand that other people actively try to achieve their goal

2. The respondents has insight how close are others to goal achievement

The respondents, on the basis of receiving the feedback of others' effort, can estimate goal achievement as important. In the end, public posting creates awareness about the assessment of one own's performance. By enabling the assessment of individual performance conditions which enable higher individual performance are created (Zajac, 1965).

This paper affirms results previous studies (e.g. . Lyman, 1984; McKenzie and Rushall, 1974; Brobst and Ward, 2002; Ward, Smith and Sharpe, 1997). The combination of goal setting with public posting was proved to be superior when compared to other interventions of this type. Furthermore, the results of this study confirm some theoretical frameworks about the importance of social environment feedback (e.g. Zajonc, 1965; Festinger, 1957; Wood, 1996).

CONCLUSION

Interventions based on goal setting theory rightly find their application in sport and recreation. The very way of giving feedback is relevant for the intervention success. Namely, it was determined that the combination of goal setting and public performance posting give the best results. On the other hand, private feedback has a less promising impact. The importance of the social context in sport should not be neglected especially when it comes to younger athletes. All of the above (even though the results were based on a small sample) can offer certain practical implication directed toward the athlete motivation increase, especially in younger age groups.

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