OUTDOOR ASSESSMENT AND FEEDBACK SYSTEM AND DEVICE

FIELD OF INVENTION

[001] The present invention relates to an interactive real time outdoor assessment and feedback system and device using 1 or 2 way wireless devices to transmit and receive assessment and feedback (Yes/No or Like/Dislike or award merit or demerit points) for outdoor training or learning or any other outdoor situation requiring immediate individual or team feedback or assessment.

BACKGROUND OF INVENTION

[002] Present means of collecting formal feedback on a lecture or speech or performance is only done after it has ended. This is normally done with the use of feedback forms, which can be by softcopy or hardcopy. There is a lack of an element of fun thus the giving of feedback is usually avoided, if possibly. Present means also lack an interactive tool or process that can be used by participants to provide real-time feedback to the lecturer or speaker or performer while the lecture or speech or performance is on-going so that the person receiving feedback can make necessary correction or adjustment as the situation demands.

[003] Another situation where immediate assessment or feedback is vital is for improved dynamics of groups, be it group training or discussion or brainstorming or team building. In such groups, peer appraisal or ranking, if required, is normally done after the session via electronic or hardcopy means. There is a lack of interactive and real time tool that can be used by participants to “shoot” at each other to demonstrate approval or disapproval for the pointers they are making during the interaction. There is also no measure of the number of good discussion pointers brought up by specified individual during the session.

[004] The facilitator or trainer also lacks an interactive tool to commend and award points, and vice versa, to participants during outdoor or indoor training or learning session in accordance to the lesson objectives, or to promote a certain set of desired core values and beliefs of an organization.

[005] Obtaining feedback in outdoor training or learning or teaching sessions poses even

more challenges to the training institution. The trainer, not only having to deal with the elements as well as the challenge of having portable and hardy devices to obtain and monitor feedback. Since learning can be enhanced if the learning situation is made enjoyable or fun, present methods of obtaining feedback in present training or teaching environments do not have any element of fun or group spirit as most training is individualized.

Similarly, in an F&B set up, where hot food and water could damage any electronic device, there is a lack of hardy electronic feedback device that allows customers to give anonymous feedbacks to specific service personnel regarding the service provided. Currently the feedback form in F&B set up is a hardcopy form, which customers find it to be a chore to fill or there is no means presently to directly feedback on specific service staff member who has either done a great job or a sub-standard one.

[006] US2010062411 describes a system and method for predicting performance on an assessment and guiding users to take action to accelerate learning , improving performance and provide teacher evaluations using the Zone of Proximal Development as the driver for understanding the value of prioritizing concepts.

[007] US20130115586 relates to method and system for providing threaded feedback in the form of a two way conversation between a teacher and a student. The conversation data include educational targets or attainment of educational targets.

[008] What is desirable is a real time assessment and feedback system which allows trainers and trainees or members in a group training or learning in outdoors situation to obtain real time assessment and feedback on the progress of the teaching or learning or training session. Such real time information could be useful to help the trainers and trainees make adjustments while the teaching or training session is still on-going, to suit the learning or teaching requirements of the group, based on the feedback.

[009] What is desirable is a portable, handy, hardy and simple to use feedback device even in outdoors, and which is used in conjunction with a real time assessment and feedback system, suited for teaching or learning or training session outdoors. Such real time information would be useful to help the trainers and trainees provide recorded and timely feedback to participants to emphasize on less tangible values like good teamwork and leadership. The assessment and

feedback device should make 360 degrees appraisal and in real time as good behaviours and deeds can be clearly promoted and can enhance the teaching or learning or training experience.

[0010] It is essential that such feedback devices be simple to operate so as not to disrupt the on-going process be it a lecture or training or group discussion. It is desirable that supporting system and software provide individual as well as compile information of the group on a real time basis so that the teaching or training session or group discussion can be enhanced. For example points can be awarded collectively, individually and aggregated as score for a team.

[0011] It is desirable that such feedback devices are connected via wireless means (e.g. Bluetooth, RF, or WLAN) to mobile computers to enable feedback information to be transferred across the wireless interaction devices and stored in web server. The information obtained will enhance interactions amongst and between the learners and trainers in school, adult training, and learning institutions, and during sport, corporate or military training. It is desirable that the interactions using the devices also provide data for evaluation of both learners and trainers. The invention can also be used during team building events, live performances, feedback on business services and products, and group discussion to enhance interactions and provide live feedbacks to the participants.

SUMMARY OF INVENTION

[0012] The Outdoor Assessment and Feedback System and device described herein overcomes the drawbacks of prior art and enables trainers or facilitators to use wireless interactive devices that serve as a real time feedback tool either to commend and disapprove certain behavior of learners or trainees. Amongst learners or trainees, they can also use the wireless interactive tool to award “likes” and “dislikes” of each other during discussion and interaction during group training or learning. The system can also be adapted to award merit/demerit points or award simple numeric scores or marks in a particular situation such as a presentation or performance .

[0013] The present Outdoor Feedback Devices used with the Outdoor Assessment and Feedback System consists of a plurality of wireless interactive wearable devices to provide Feedback on the training while the training is still on-going. The wearable device is either an emitter or a sensor (receiver). The wearable device can also have both an transmitter or a

sensor (receiver) and switchable to either mode. The Outdoor Feedback Device in the form of a Wireless Interactive Transmitter can be an infrared (IR) light transmitter or RF transmitter. The Wireless Interactive Receiver can be an infrared lens that focus a series of encoded infrared light signals from the transmitter or a RF receiver. The Wireless Interactive Receiver contains one or more photodiodes for detecting infrared light beam. In order for data to be communicated, the data is modulated or encoded onto a carrier frequency. A variety of grips, triggers and structures have also been contemplated for the Wireless Interactive Emitter and Receiver.

[0014] The inventive Outdoor Feedback Device in the form of a Wireless Interactive Transmitter and Receiver, contains an embedded Bluetooth or RF or WLAN module that transmits information to and receives information from cloud server either directly or via a mobile computer, which can be a personal computer, notebook, tablet, smartphone, smart watch, smart glasses or any device capable of sending and receiving wireless signals.

[0015] The present invention further relates to a server based website or apps on the mobile computers that provides the Graphical User Interface for users to express the specified assessment or feedback when using the Wireless Interactive Emitter or Receiver as the Outdoor Feedback Device. The feedback information are stored at the web server, which are used to generate real time reports which include evaluation of the level of interactions during each stage of a training or learning session. Individualised assessment report on individual trainer or facilitator, and trainee or learner would also be available real-time so as to enable the trainer or facilitator to make adjustments to the style, pace and content of the teaching session to suit the style, understanding and pace of learning or training of the group.

[0016] A first objective of the invention is a Real Time Outdoor Assessment and Feedback System, comprising:-

2 or more Outdoor Feedback Devices, each Outdoor Feedback Device having a Receiving Mode; and

an Transmitting Mode, at least 1 Outdoor Feedback Device set to a Receiving Mode and at least 1 or more Outdoor Feedback Devices set to Transmitting Mode;

said Outdoor Feedback Device in Transmitting Mode sends out one or more messages to the 1 Feedback Device in Receiving Mode;

a computer system to record and tabulate the messages send by the 1 or more Outdoor Feedback Devices in emitter mode and received by the Outdoor Feedback Device in Receiving Mode; and

Display means for display of reports of messages generated by the computer system,

in training, team building, sports, corporate, F&B and other outdoor learning situations. wherein the assessment and feedback are used to enhance training and coaching experiences as well as enable the trainer to obtain real time feedback on training style, pace and content and adjust the training style, pace and content immediately.

[0017] Preferably, the messages in an one-way Feedback are in the form of " Like " or " Dislike ".

[0018] Preferably, the messages in an one-way Feedback are in the form of one or more " Merit " points or one or more " Demerit " points.

[0019] Preferably, the messages in a two-way Feedback are in the form of one or more messages exchanged between the trainer and trainees or between trainee and trainee.

[0020] Preferably the messages are analysed in the computer system, and reports generated on the state of the training session from the feedback given while the training is still on-going.

[0021] Preferably, the messages exchanged are displayed on the display means as well as on the smartphones and laptops of the trainers and trainees, so that the trainers and trainees have an enhanced and enjoyable environment for training or learning. .

[0022] Preferably the messages exchanged are also displayed on social media applications on the smartphones and laptops of other interested parties so that other interested parties can see the exchanges of messages.

[0023] A second object of the Invention is an Outdoor Feedback Device comprising as follows:-

IR/RF transmitter for sending of messages;
IR/RF receiver for receiving of messages,
Trigger to send message to a receiver,
A speaker for broadcasting of a sound file,
On/Off Button, and
LED lights to display the receipt or non-receipt of messages

[0024] Preferably the Outdoor Feedback Device has a motor to vibrate the device upon receipt of a signal or a message.

[0025] Preferably the Outdoor Feedback Device has an accelerometer.

[0026] Preferably, the Outdoor Feedback Device can be switched to either a Receiving Mode or Emitting Mode, or can be configured to be in dual modes.

[0027] Preferably the Outdoor Feedback Device has additionally, a motor which can vibrate when the speaker is not used.

[0028] Preferably, the Outdoor Feedback Device has additionally, an accelerometer which can be triggered to send a message or signal upon being bumped.

[0029] Preferably the Outdoor Outdoor Feedback Device has an additional display panel to allow configuration of the message to be sent.

[0030] Preferably the Outdoor Feedback Device send the messages in the form of " Like " or " Dislike ".

[0031] Alternatively the Outdoor Feedback Device sends the messages in the form of one or more " Merit " points or one or more " Demerit " points.

[0032] Preferably the Outdoor Feedback Device has a speaker which plays a sound file upon receipt of the messages.

[0033] Alternatively the Outdoor Feedback Device has a motor which vibrates upon receipt of the messages.

[0034] Preferably upon receipt of the messages, the LED lights will be turned on to display the receipt or non-receipt of a message.

[0035] A third objective of the invention is a real time Method of Feedback for outdoor training or coaching, comprising the steps of :-

setting up 2 or more Outdoor Feedback Device, each Outdoor Feedback Device having a Receiving Mode and a Transmitting Mode,

setting at least 1 Outdoor Feedback Device to a Receiving Mode and at least 1 or more Outdoor Feedback Devices to transmitting Mode;

setting up a computer system to record and tabulate the messages send by the 1 or more Outdoor Feedback Devices in emitter mode and received by the Outdoor Feedback Device in Receiving Mode; and

assigning the at least 1 Outdoor Feedback Device in a Receiving Mode to a trainer;

assigning the at least 1 or more Outdoor Feedback Device in a Transmitting Mode to one or more trainees;

the trainees using said Outdoor Feedback Device in Transmitter Mode to send out one or more messages to the Trainer assigned with the at least 1 Outdoor Feedback Device in Receiving Mode;

all messages being recorded by the computer system and tabulated and analysed;

Display means for display of reports tabulated by the computer system as well as all

messages received in real time;

so that while the training is going on, both trainer and trainees would be able to see the messages send by the trainees and received by the trainer, thereby enhancing the training session and for more effective training, enabling the trainer to make any adjustment to the pace and content of the training even as the training is in progress.

[0036] Preferably, the messages send are in the form of " Like " or " Dislike ".

[0037] Preferably, the messages sent are in the form of one or more " Merit " points or one or more " Demerit " points.

[0038] Preferably, upon receipt of the messages, a sound file is played. .

[0039] Preferably, upon receipt of the messages, the Outdoor Feedback Device would vibrate if a sound file is not played. .

[0040] Preferably, upon receipt of the messages, the LED lights will turn on to display the receipt or non-receipt of a message. .

[0041] Preferably, all the messages are displayed real time in social media applications.

[0036] Preferably the Outdoor Feedback Device used in the Real Time Outdoor Assessment and Feedback Method comprises the following:-

IR transmitter for sending of messages;
IR receiver for receiving of messages,
Trigger to send message to a receiver,
A speaker for broadcasting of a sound file,
On/Off Button
LED lights to display the receipt or non-receipt of messages

[0037] Preferably, the Outdoor Feedback Device has additionally, a motor which can vibrate when the speaker is not used.

[0038] Preferably, the Outdoor Feedback Device has additionally, an accelerometer which can be triggered to send a message or signal upon being bumped.

[0039] Preferably, the messages send by the Outdoor Feedback Device are in the form of " Like " or " Dislike ".

[0040] Alternatively, the messages send by Outdoor Feedback Device are in the form of one or more " Merit " points or one or more " Demerit " points.

[0041] Preferably, upon receipt of the messages, the Outdoor Feedback Device plays a sound file.

[0042] Alternatively, upon receipt of the messages, the Outdoor Feedback Device would vibrate if a sound file is not played. .

[0043] Preferably upon receipt of the messages, the Outdoor Feedback Device would turn on the LED lights to display the receipt or non-receipt of a message.

[0044] Preferably the Outdoor Feedback Device allows the user to select the user name using the LCD panel with an UP and DOWN arrow key, and transmit and feedback the merit/demerit point to the selected user name via the use of WLAN (Bluetooth, Zigbee or other RF means).

[0045] Preferably, the Outdoor Feedback Device allows the user to select a merit/demerit point and physically bumps into another Outdoor Feedback Device rocking the accelerators simultaneously and feedback the merit/demerit point via the use of WLAN (Bluetooth, Zigbee or other RF means).

[0046] Preferably all the messages are displayed real time in social media applications.

BRIEF DESCRIPTION OF THE DRAWINGS

[0047] Figure 1 is a block diagram of the components in the Real Time Outdoor Assessment and Feedback System used for outdoor training or teaching situations.

[0048] Figure 2 is an illustration of one embodiment of the Outdoor Feedback Device.

[0049] Figure 3 is an illustration of one embodiment of the Invention for real time assessment and feedback by trainees to trainers during outdoor training.

[0050] Figure 4 is an illustration of the various components in the embodiment of the Outdoor Assessment and Feedback System in an outdoor training situation.

[0051] Figure 5 is an illustration of the set up process of the wireless Interactive Outdoor Assessment and Feedback system

[0052] Figure 6 is a Hit/Miss Flow Chart on the sending of signal to the recipient of a feedback (trainer) .

[0053] Figure 7 is an illustration of one embodiment of the Invention for real time assessment and feedback by trainees in a learning or training situation awarding points to other trainees in a peer to peer assessment situation.

[0054] Figure 8 is a process flow chart showing the steps involved when a trainer provides assessment and feedback to a trainee.

[0055] Figure 9 is a process flow chart showing the steps involved in a training feedback for peer to peer appraisal.

[0056] Figure 10 is an illustration of yet another embodiment of the invention involving members of an audience awarding points to participants based on intangibles in the performance.

[0057] Figure 11 is an illustration of the set up process of the Outdoor Assessment and

Feedback system used in a situation of an audience awarding points to participants based on intangibles in the performance.

[0058] Figure 12 is a process flow chart showing the steps involved obtaining assessment and feedback from members of an audience awarding points or " likes " or " dislikes " using an embodiment of the real time outdoor assessment and feedback system.

[0059] Figure 13 is an illustration of yet another embodiment of the invention involving customers of a business providing anonymous assessment and feedback to the business on certain aspects of their experience e.g. feedback on service rendered to the customer.

[0060] Figure 14 is an illustration of the various components in the embodiment of the Invention for real time anonymous assessment and feedback on service rendered from customers of a business.

[0061] Figure 15 is an illustration of the set up process of the wireless interactive outdoor assessment and feedback system used by a business to obtain anonymous assessment and feedback from customers on the service level experienced or awarding points to the service staff based on intangibles in the performance of the service to the customer.

[0062] Figure 16 is a process flow chart showing the steps involved obtaining anonymous assessment and feedback from customers of a business awarding points or " likes " or " dislikes" using an embodiment of the real time feedback system.

[0063] Figure 17 is an illustration of another embodiment of the Invention for real time assessment and feedback to a lecturer by students attending a lecture.

[0064] Fig 18 is an illustration of another embodiment of the Outdoor Feedback Device used with a low powered RF network.

[0065] Fig 19 is an illustration of another embodiment of the Outdoor Feedback Device having an accelerometer and used with a low powered RF network.

DESCRIPTION OF PREFERRED EMBODIMENTS

Preferred Embodiment of Interactive Real Time Outdoor Assessment and Feedback System

[0066] Figure 1 is a block diagram of the components in the Interactive Real Time Outdoor Assessment and Feedback System.

[0067] Figure 2 is an illustration of one embodiment of the Outdoor Feedback Device (10). The Outdoor Feedback Device (10) has an IR transmitter (20) and receiver (22). It also has a WLAN module for information transfer by wireless means such as Bluetooth, Zigbee, Wifi and other wireless means. As the Outdoor Feedback Device (10) is small in size, it can be worn on the arm or shirt pocket. The wearable device can be switched to either Receiver Mode or Transmission Mode at the start of the training. This switchability to either mode would reduce the costs of having two types of wearable devices and further simplify inventory management of such devices.

[0068] The workings of the invention would be described by reference to Fig 1 and Fig 2. Users have mobile devices (smart phone and laptop) for at least 2 groups of separate users – a trainer and a number of trainees. The trainer would have the Outdoor Feedback Device (10) switched to a Receiver Mode while the trainees would have their Feedback devices switched to a sending or transmitting mode. The trainees having the Outdoor Feedback Device (10) in Transmitting Mode send feedback directed at the Outdoor Feedback Device (10) (in Receiving Mode) worn by the Trainer. The feedback signals would be captured in the Outdoor Assessment and Feedback System in a server and analysed. The feedback in the form of points or “likes “ or “dislikes “ would be displayed real time on display screens or on the smartphones and laptops of participants for them to see how the group of participants and the trainer are interacting in terms of their level of understanding of the session and , their appreciation for what is going on.

[0069] The Outdoor Feedback Device (10) consists of an IR transmitter (20) and Receiver (22) that are data linked to at least 2 mobile devices (smart phone and laptop) for at least 2 separate users in accordance to the embodiment of the present invention. The Outdoor Feedback Device (10) consists of an IR transmitter (20) and a Receiver (22) which is switchable to either mode – as an IR transmitter (20) or as a receiver (22). Housekeeping of

such devices is therefore made easier. Alternatively, the Outdoor Feedback Device could use RF. The Outdoor Feedback Device (10) has a trigger (24) or button for sending one or more signals. The Outdoor Feedback Device (10) also has a speaker (28) so that the sending or receiving of signals can cause a sound file to play, thereby adding to the fun element of such Outdoor Assessment and Feedback System. Each participant will wear a Outdoor Feedback Device (10).

[0070] A participant has a mobile computer e.g. tablet or smartphone that is connected via Bluetooth or RF or any wireless module in the wearable Outdoor Feedback Device (10) which is switched to emitter mode. Other participants may have mobile computers e.g. tablet or smartphone that is connected via Bluetooth or RF module to other wearable devices which are switched to emitter mode (for trainees). All devices are connected to mobile computer in accordance to the design of the mobile computers. Website or apps can be accessed on the mobile computers via login, and information are stored and processed by a server.

[0071] Feedback received or given through the Outdoor Feedback Devices (10) would be sent to the Outdoor Assessment and Feedback System and analysed. Real time Reports would then be generated and such reports can be displayed on the user's smartphone or laptop or onto a display screen or television screen for all involved to watch. The same reports or similar reports would also be linked by the server to other social media applications on smartphones and through the Internet, so that even other people not present in the outdoors training or coaching session could view the exchanges of messages between the trainers and trainees (in training feedback situation) and between trainee and trainee (in peer to peer appraisal situation).

[0072] The Outdoor Feedback Device (10) could use either IR/RF. When the Outdoor Feedback Device (10) is in Transmitter Mode and is using IR, it is capable of transmitting an IR beam of light through an infrared lens. The Transmitter is connected to a mobile computer or smartphone via Bluetooth, RF, or WLAN. Firing of the transmitter will require the pressing of a button and the power of the IR beams or RF wireless signals emitted is calibrated to the desired range to ensure there is no rebound. The pressing of the button may also trigger a command to the mobile computer or smartphone to play a sound file downloaded from the server to accompany the transmission of feedback. The LED light could be switched on to a Green colour for a "Like" or Red "for "Dislike" or any pair of colours. Alternatively the pressing

of the button on the transmitter would not emit any sound but may still turn on a LED light to flash at the lens, so that user knows that emitter has been pressed. It is also possible for the Outdoor Feedback Device (10) to have a motor which would vibrate instead of playing a sound file or lighting up the LED light. There is an ON/OFF switch (26) and a L/R switch to allow the firmware to establish connection via Bluetooth or RF or or WLAN to the smartphone that operates on IOS or Andriod. Embedded within the IR/RF transmitter (20) is battery, wireless module (e.g. Bluetooth, ZigBee for a WLAN), IR Transmitter, lens and microprocessor. The IR/RF transmitter (20) can also be equipped with a LCD screen (30) with control buttons. Since the Outdoor Feedback Device (10) (in transmitter mode) is a small portable device, it can be worn on the wrist or on the shirt.

[0073] If the Outdoor Feedback Device (10) is in Receiver Mode, it would be capable of receiving an IR beam of light through an infrared lens or an electronic signal. The receiver (22) is connected to a mobile computer or smartphone via Bluetooth, RF, or WLAN. Upon firing of the emitter, which is directed at the receiver or sensor, an electronic signal will be received . The receipt of the electronic signal may also trigger a command to the mobile computer or smartphone to play a sound file downloaded from the server to indicate the receipt of feedback. Alternatively the receipt of the electronic signal would not cause any sound to be created but may still turn on a LED light to flash at the lens, so that user knows that feedback has been received. The LED light could be switched on to a Green colour for a “Like“ or Red “for “Dislike“ or any pair of colours. It is also possible for the Outdoor Feedback Device (10) to have a motor which would vibrate instead of playing a sound file or lighting up the LED light. There is an ON/OFF switch (26) and a L/R switch to allow the firmware to establish connection via Bluetooth or WLAN to the smartphone that operates on IOS or Andriod. Embedded within the receiver (22) is battery, wireless module (e.g. Bluetooth, RF, WLAN), IR sensor, lens and microprocessor. The receiver (22) can also be equipped with a LCD screen (30) with control buttons. Since the Outdoor Feedback Device (10) (receiver mode) is a small portable device, it can be worn on the wrist or on the shirt.

[0074] Figure 3 is an illustration of one embodiment of the Invention for real time feedback by trainees to trainers during outdoors training. Figure 4 is an illustration of the various components in the embodiment of the Invention for real time assessment and feedback in an outdoor training situation. Figure 5 is an illustration of the set up process of the wireless interactive assessment and feedback system. Figure 6 is a Hit/Miss Flow chart on the sending

of signals to the recipient of a feedback (trainer) .

Preferred Embodiment of Outdoor Assessment and Feedback Method

[0075] The use of the Outdoor Assessment and Feedback Method in monitoring Training Feedback is described by reference to Figures 3, 4, 5 and 6.

[0076] Referring to Fig 3, the Feedback would be in terms of the Trainer awarding merit or demerit points to trainees based on intangibles such as desirable character traits observed, and core values displayed during the session. Such outdoor Training sessions could be a Sports Training session involving Coach and sportsmen or in a military environment, involving Instructor and trainees or in a school environment involving Teacher and students. The trainer would be wearing an Outdoor Feedback Device (10) set to Transmitter Mode. The trainees would be wearing Outdoor Feedback Devices (10) set to Receiver Mode. Fig 4 illustrates the various components in the Outdoor Assessment and Feedback System in an outdoor training situation. A participant may use a mobile computer e.g. tablet or smartphone which is connected via Bluetooth or RF or any wireless module in the wearable Outdoor Feedback Device (10) which is switched to Receiver mode. Other participants may have mobile computers e.g. tablet or smartphone that is connected via Bluetooth or RF module to other wearable devices which are switched to emitter mode (for trainer). All Outdoor Feedback Devices (10) are connected to mobile computer in accordance to the design of the mobile computers. Website or apps can be accessed on the mobile computers via login, and information are stored and processed at the server. The same reports or similar reports would also be linked by the server to other social media applications on smartphones and through the Internet, so that even other people not present in the outdoors training or coaching session could view the exchanges of messages between the trainers and trainees (in training feedback situation) and between trainee and trainee (in peer to peer appraisal situation).

[0077] The Trainer is wearing an Outdoor Feedback Device (10) (Transmitter Mode). The Outdoor Feedback Device (10) could use either IR/RF. If the Outdoor Feedback Device (10) uses IR, then it is capable of sending an IR beam of light through an infrared lens. Each trainee wears an Outdoor Feedback Device (10) (Receiver Mode), either on the wrist or on the trainee's shirt. The Receiver (22) is connected to a mobile computer or smartphone via Bluetooth or WLAN. If the Trainer wants to give feedback or assessment in the form of a

demerit point, the trainer would point the IR transmitter (20) at the specific trainee and press the button on the IR transmitter (20) to fire an electronic signal from the IR transmitter (20) towards the receiver (22) worn by the trainee. This will enable the receiver (22) to register the signal. The receipt of the signal may also trigger a command to the mobile computer or smartphone to play a sound file downloaded from the server that feedback (demerit point) has been given. Alternatively the receiving of the wireless electronic signal from the IR transmitter (20) would not play any sound but may still turn on a LED light to flash at the lens, so that trainee knows that feedback (a demeit point) has been discretely awarded to him. The Outdoor Feedback Device (10) could also vibrate upon receipt of the electronic signal. If the Outdoor Feedback Device (10) uses RF, the same methodology and process would apply.

[0078] Fig 5 refers to set up process before the commencement of the Training session. The trainer would connect an Outdoor Feedback Device (10) to a web-based software to shoot and designate his Outdoor Feedback Device (10) be the only receiver. The Outdoor Feedback Device (10) issued to the trainees would be designated as only emitters. The trainer could also designate an Outdoor Feedback Device (10) to be both Emitter and Receiver. The identity of each trainee and identity of each feedback device assigned to the trainee would be entered into the Outdoor Assessment and Feedback System. Other settings are also entered into the System such as whether a sound file is played, the type of sound to be played. If the sound file is not played, the Outdoor Feedback Device (10) can be set to vibrating mode. Alternatively, the LED light could be set to light up upon receipt of a signal.

[0079] Fig 6 describes the workings of Hit/Miss Flow Chart. The Trainer uses the Outdoor Feedback Device (10) to select and award a point or take away a point by pressing the " Like " or " Dislike" button. The trainer would aim the Outdoor Feedback Device (10) at the trainee to send a signal in order to award the point. The trainer then presses the trigger on his Outdoor Feedback Device (10). A sound file is then played. If the trainee's Outdoor Feedback Device (10) successfully receives the signal, the trainee's Outdoor Feedback Device (10) would display a " Green " light from the LED. A sound file may also be played on the trainee's Outdoor Feedback Device (10). If the trainee's Outdoor Feedback Device (10) does not receive the signal, the trainer's Outdoor Feedback Device (10) would display a " Red " light from the LED.

[0080] Figure 7, 8 and 9 describes another embodiment of the invention used for monitoring Training Feedback, in this case Peer to Peer Appraisal. All Trainees are wearing Outdoor Feedback Devices (10) which can be switched to Transmitter Mode capable of sending an IR beam of light through an infrared lens or switched to Receiver mode. The Outdoor Feedback Device (10) is worn either on the wrist or on the shirt. The Outdoor Feedback Device (10) is connected to a mobile computer or smartphone via Bluetooth or WLAN. If someone (trainee) wants to give feedback or assessment, the Outdoor Feedback Device (10) is switched to Emitter Mode. An electronic signal in the form of a point is then emitted from the person giving the feedback to another person (receiving the feedback). When an electronic signal is received, the Outdoor Feedback Device (10) on the recipient would be activated to receiving mode. This will enable the receiver(22) to register the signal. The receipt of the signal may also trigger a command to the mobile computer or smartphone to play a sound file downloaded from the server that feedback (demerit point) has been given. Alternatively the receiving of the wireless electronic signal from the IR/RF transmitter (20) would not play any sound but may still turn on a LED light to flash at the lens, so that trainee knows that feedback (a demeit point) has been discretely awarded to him. The receiving of the wireless electronic signal from the IR/RF transmitter (20) may not play any sound nor turn on a LED light but could set the motor to vibrate.

[0081] In a group discussion or learning session, or team building activity when peer appraisal of the participant constitutes part of the learning objective and assessment, the set up as shown in Figure 5 can be configured for many users. Each user will have a mobile computer with a login website or apps that is identified with the user, and the mobile computer will be connected to an Outdoor Feedback Device (10) (Transmitter or Receiver Mode).

[0082] During the one of the outdoor group discussion and learning activities or team building activity, the facilitator or trainer can design a peer appraisal session by using 2 messages: “Like” and “Dislike”. Facilitator or trainer will brief the participants the conditions when the participants can shoot “Like” and “Dislike” to each other to demonstrate their support for the pointers or ideas or argument or explanation brought up during a group discussion, or vice versa. The same messages can be used for team building activities when participants can commend by awarding “Like” to good behavior and exemplary conduct or vice versa. The facilitator or trainer can also limit the number “Likes” and “Dislikes” they can give so that participants do not frivolously dish out their feedbacks. At the end of the session, reports can be

generated to view the number of “Like” and “Dislike” each of the participants receives, and this form the peer appraisal amongst the participants and the report can be used by the facilitator or trainer during debrief.

[0083] Fig 10, 11 and 12 describes the use of the Outdoor Assessment and Feedback System in a situation involving Audience to Participant appraisal (such as Role Play in an outdoor training session). In such Role Play session, points may be awarded to participants based on intangibles in the performance. Fig 11 refers to the set up procedures where various settings for use of the Outdoor Feedback Device (10) are made. Fig 12 shows how members of the audience award a “Like “ or “ Dislike “ to the participant in the Role Play. In this situation, all the number of “ Likes “ and “ Dislikes “ are tabulated and may be displayed on a screen on a real time basis or immediately after the performance of the participants in the Role Play. Such use of Outdoor Assessment and Feedback System would make the Role Play not only enjoyable but highly interactive thereby enhancing learning focusing on tangible and intangible performance indicators.

[0084] Fig 13, 14, 15 and 16 describes another embodiment of the Invention for real time anonymous feedback by customers awarding points to a business based on their satisfaction with the service and product experience immediately after conclusion of a purchase transaction. Similar features in this embodiment and other embodiments described earlier would not be mentioned.

[0085] The customer is given an Outdoor Feedback Device (10) which is switched to Emitter Mode capable of sending an IR beam of light through an infrared lens. The customer gives feedback by pressing the button for the transmission of a signal to one of several receivers located in the premises of the business. An electronic signal in the form of a value (points) or “ Like “ or “ Dislike “ is then emitted from the person giving the feedback to any one of the receivers (22) in the store, the real time feedback being the customer’s shopping experience in the store. If individual staff of the business is to be assessed, the customer may point the emitter at the receiver worn by the store personnel . In such situations, when the electronic signal is received, the Outdoor Feedback Device (10) on the recipient would enable the receiver to register the signal. The receipt of the signal may also trigger a command to the mobile computer or smartphone to play a sound file downloaded from the server that feedback (demerit point) has been given. Alternatively the receiving of the wireless

electronic signal from the IR/RF transmitter (20) would not play any sound but may still turn on a LED light to flash at the lens, so that store personnel knows discretely that feedback (a demerit point) has been awarded to him.

[0086] For real time assessment of service level of store personnel or customer and store level service experience, the totality of all emitted signals would be collated in the store database and the number of likes/dislikes or merit/demerit points awarded to each store personnel as well as the entire store may be tabulated and reviewed real time so that the store management can take remedial action, if necessary. In this way, the store would be able to respond almost immediately to negative feedback and take immediate action to retain custom and goodwill of customers.

[0087] Fig 17 is an illustration of a further embodiment of the invention used in obtaining feedback from participants in an outdoor lecture, but this time the real time feedback is whether the participants understand or don't understand the lecture.

Preferred Embodiment of Outdoor Assessment and Feedback Device

[0088] Besides Fig. 2 which shows an embodiment of the Outdoor Feedback Device (10), Fig 18 is an illustration of another embodiment of the Outdoor Feedback Device (10) used with a low powered RF network.

[0089] Fig 19 is an illustration of another embodiment of the Outdoor Feedback Device (10) having an accelerometer (34) and used with a low powered RF network.

[0090] The Outdoor Feedback Device (10) used with the Outdoor Assessment and Feedback System can be in the form of a Wireless Interactive IR transmitter (20) and Receiver (22), which contain embedded Bluetooth or RF or WLAN module that transmits information to and receives information from cloud server either directly or via a mobile computer, which can be a personal computer, notebook, tablet, smartphone, smart watch, smart glasses or any device capable of sending and receiving wireless signals.

[0091] The Outdoor Feedback Device (10) is either an transmitter or a sensor (receiver). The Outdoor Feedback Device (10) which is wearable can also have both an IR transmitter (20)

or a receiver (22), which is switchable to either mode. The Wireless Interactive Transmitter can be an infrared (IR) light transmitter (20) or RF transmitter. The Wireless Interactive Receiver can be an infrared lens that focus a series of encoded infrared light signals from the transmitter or a RF receiver (22). The Wireless Interactive Receiver (22) contains one or more photodiodes for detecting infrared light beam. In order for data to be communicated, the data is modulated or encoded onto a carrier frequency. A variety of grips, triggers and structures have also been contemplated for the Wireless Interactive IR transmitter (20) and Receiver (22).

[0092] The Outdoor Feedback Device consisting of a Wireless Interactive IR transmitter (20) and Receiver (22), should be compact and robust yet simple to operate in outdoor environment. The Outdoor Feedback Device (10) should have simple easy-to-operate controls which are assigned functions like power on/off or trigger or plus/minus or up/down for the sending of signals representing likes or dislikes or a simple score from plus 1 upwards to minus 1 downwards. The Outdoor Feedback Device (10) uses low powered RF network such as Zigbee so that power consumption is low thus enabling the Outdoor Feedback Devices (10) to be used longer outdoors. An embodiment of the Outdoor Feedback Device (10) would has a LCD display screen (30) which enables the user to send a signal even for non line-of-sight data transmission unlike IR data transmission.

[0093] The Outdoor Feedback Device (10) powered by low powered RF network can also include an accelerometer (34) instead of a LCD display screen (30). If an accelerometer (34) is embedded, the Outdoor Feedback Device can be tapped or bumped by the user (Trainer) on another person (Trainee). When this is done, the movement would trigger the accelerometer (34) to transmit a signal (in the form of a merit/demerit point) from the triggered Outdoor Feedback Device (10) to the trainee's Outdoor Feedback Device (10).

The advantages of a low powered RF network using Zigbee enables devices to be grouped together. Battery power consumption is also low, an important consideration when the Feedback and Assessment devices are used outdoors.

Other uses of Outdoor Assessment and Feedback System

[0094] The use of the invention described with reference to certain preferred embodiments is intended to be exemplary only and does not limit the ways the Wireless Interactive Real Time

Outdoor Assessment and Feedback System. Other possibilities where the invention can be used are given below (this list is not exhaustive) .

Assessment of Behaviors for outdoor activity

[0095] There are many situations where outdoor training can be enhanced with interactive feedback in a fun and light hearted mood, benefitting both trainer and trainees. In an assessment of behavior and performance for outdoor activity, e.g. in a military exercise, sport training or school excursion, when the trainer wants to promote and encourage a certain set of core values or beliefs, the set up as described herein can be configured for many trainers; each trainer will have a smartphone with a login website or apps that is identified with the trainer and their smartphones will be connected to a Wireless Interactive IR transmitter (20) and Receiver (22), while the smartphones of trainee are linked only to Wireless Interactive Sensors.

[0096] During one of the outdoor training sessions, the trainer can design the messages to be beamed as: “Teamwork”, “Leadership” and “Initiative”. Organizer will brief the trainees the conditions when they will be awarded with points to commend their behavior. For example in a military training, the trainer can award a point for “Initiative” to a soldier trainee without interfering in his/her action in the military training by beaming a point to his sensor when the soldier trainee demonstrated initiative to fend off enemy attacks. During a school outdoor camp, student who displays leadership can be awarded a point when he/she is organizing the class or group of students to achieve an objective. At the end of the outdoor activity, a compiled feedback can be provided to show who has done well in terms of achieving the set core value or beliefs. .

[0097] During one of the outdoor lessons or lectures, the trainer or teacher can design the messages to be beamed as: “Don’t Understand”, “Too fast”, “Wake Up” and “Good Q or A” (Good question or answer). Trainer or teacher will brief the trainees or students the conditions when they can shoot these messages to provide feedback to the teacher and amongst themselves. During the lecture or lesson, the trainees or students can shoot the teacher if they found that the lesson is too fast or they don’t understand what was taught. A quick glance at the teacher’s mobile computer. During breaks, the system would give the trainer or teacher a quick idea of the feedback on the lesson, and whether the trainees understand the lesson. Students can also beam each other to wake up if they find their friends doze off, and a sound

file can be played on his/her mobile computer. Teacher can beam “Good Q or A” if the student asks a good question or provides a good answer. The teacher can also be shot with “Good Q or A” if the students like the thought provoking question that is asked by the teacher or the teacher has given a clear explanation to a question that was asked. The use of the invention described with reference to certain preferred design of the real-time feedback is intended to be exemplary only and does not limit the ways the Wireless Interactive shooters and sensors can be used to support the real-time feedback to both teachers and students or trainers and trainees.

[0098] The system is also flexible enough to be configured to just allow students to beam their feedback by giving the student a mobile computer connected only to a real time interactive device switched to emitter mode and without the receiver (sensor). In this case, the student will only give real time feedbacks to the teacher on the pace of the lesson and whether they are coping well with the lesson.

[0099] The use of Outdoor Assessment and Feedback Device using accelerometers (34) and Zigbee would also enhance the “ fun “ factor in outdoor training or coaching sessions. A merit point or demerit point can be given when 2 Outdoor Feedback Devices (10) containing accelerometer (34) bump into each other. When this occurs, they will register a pattern of acceleration in opposite direction) and information will be transmitted via Zigbee module again.

[00100] The use of the invention described with reference to certain preferred embodiments on the real time interactive assessment of behaviour in outdoor activity is intended to be exemplary only and does not limit the ways the Wireless Interactive emitters and receivers (sensors) can be used to support the assessment of behaviour.

[00101] The present invention has been described with reference to certain preferred and alternative embodiments that are intended to be exemplary only and not limiting to the full scope of the present invention as set forth in the appended claims.

ADVANTAGEOUS EFFECTS OF THE INVENTION

[00102] The invention provides real time feedback from the trainees to a trainer or in a peer to peer training situation in the outdoors. Such interactive real time feedback would enhance

the learning experiences of trainees. It would also enable the trainers to be more effective as the trainer would know how the training session is progressing and can possibly make adjustment to the pace of teaching. The invention will make the training session more enjoyable as the messages will inject an element of fun to the training session. By making use of current trends in communication, the invention will be more relevant to younger trainees.

CLAIMS

1. An interactive Real time Outdoor Assessment and Feedback System, comprising:-

2 or more Outdoor Feedback Device (10), each Outdoor Feedback Device (10) having a Receiving Mode and a Emitting Mode, at least 1 Outdoor Feedback Device (10) set to a Receiving Mode and at least 1 or more Outdoor Feedback Devices (10) set to Transmitting Mode;

said Outdoor Feedback Device (10) in Transmitter Mode sends out one or more messages to the 1 Outdoor Feedback Device (10) in Receiving Mode;

a computer system to record and tabulate the messages send by the 1 or more Outdoor Feedback Device (10) in emitter mode and received by the Outdoor Feedback Device (10) in Receiving Mode; and

Display means for display of reports of messages generated by the computer system,

in training, team building, sports, corporate and other outdoor learning situations, wherein the assessment and feedback are used to enhance training and coaching experiences as well as enable the trainer to obtain real time feedback on training style, pace and content and adjust the training style, pace and content immediately.

2. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages in an one-way Feedback are in the form of " Like " or " Dislike ".

3. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages in an one-way Feedback are in the form of one or more " Merit " points or one or more " Demerit " points.

4. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages in a two-way Feedback are in the form of one or more messages exchanged between the trainer and trainees or between trainee and trainee.

5. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages are analysed in the computer system, and reports generated on the state of the training session from the feedback given while the training is still on-going.

6. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages exchanged are displayed on the display means as well as on the smartphones and laptops of the trainers and trainees, so that the trainers and trainees have an enhanced and enjoyable environment for training or learning. .

7. The Outdoor Assessment and Feedback System as claimed in Claim 1, wherein the messages exchanged are also displayed on social media applications on the smartphones and laptops of other interested parties so that other interested parties can see the exchanges of messages.

8. An Outdoor Feedback Device (10) as claimed in Claim 1, wherein the Outdoor Feedback Device (10) comprises the following:-

IR/RF transmitter (20) for sending of messages;
IR/RF receiver (22) for receiving of messages,
Trigger (24) to send message to a receiver (22),
A speaker (28) for broadcasting of a sound file,
On/Off Button (26), and
LED lights to display the receipt or non-receipt of messages

9. The Outdoor Feedback Device (10) as claimed in Claim 8 which has additionally, a motor which can vibrate when the speaker is not used.

10. The Outdoor Feedback Device (10) as claimed in Claim 8 which has additionally, an accelerometer (34) which can be triggered to send a message or signal upon being bumped.

11. The Outdoor Feedback Device (10) as claimed in Claim1 or Claim 8, wherein the software embedded therein allows the Outdoor Feedback Device (10) to be switched to either a Receiving Mode or Emitting Mode.

12. The Outdoor Feedback Device (10) as claimed in Claim 8 wherein it has an additional display panel.

13. The Outdoor Feedback Device (10) as claimed in Claim 8 wherein the messages send are in the form of " Like " or " Dislike ".

14. The Outdoor Feedback Device (10) as claimed in Claim 8 wherein the messages send are in the form of one or more " Merit " points or one or more " Demerit " points.

15. The Outdoor Feedback Device (10) as claimed in Claim 8 wherein upon receipt of the messages, the speaker (28) plays a sound file.

16. The Outdoor Feedback Device (10) as claimed in Claim 8 wherein upon receipt of the messages, the Outdoor Feedback Device (10) would vibrate if a sound file is not played. .

17. The Outdoor Feedback Device (10) as claimed in Claim 8 , wherein upon receipt of the messages, the LED lights will be turned on to display the receipt or non-receipt of a message. .

18. An interactive Real Time Method of Feedback for use in outdoor training or coaching, comprising the steps of :-

setting up 2 or more Outdoor Feedback Devices (10), each Outdoor Feedback Device (10) having a Receiving Mode and a Emitting Mode,

setting at least 1 Outdoor Feedback Device (10) set to a Receiving Mode and at least 1 or more Outdoor Feedback Devices (10) set to Emitting Mode;

setting up a computer system to record and tabulate the messages send by the 1 or more Outdoor Feedback Devices (10) in emitter mode and received by the Outdoor Feedback Device (10) in Receiving Mode; and

assigning the at least 1 Outdoor Feedback Device (10) in a Receiving Mode to a trainer;

assigning the at least 1 or more Outdoor Feedback Devices (10) in a Receiving Mode to one or more trainees;

the trainees using said Outdoor Feedback Device (10) in Emitter Mode to send out one or more messages to the Trainer assigned with the at least 1 Outdoor Feedback Device (10) in Receiving Mode;

all messages being recorded by the computer system and tabulated and analysed;

Display means for display of reports tabulated by the computer system as well as all messages received in real time;

so that while the training is going on, both trainer and trainees would be able to see the messages send by the trainees and received by the trainer, thereby enhancing the training session and for more effective training, and also enabling the trainer to make any adjustment to the style, pace and content of the training while the training is in progress.

19. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein the messages are in the form of " Like " or " Dislike ".

20. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein the messages are in the form of one or more " Merit " points or one or more " Demerit " points.

21. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein upon receipt of the messages, a sound file is played.

22. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein upon receipt of the messages, the Outdoor Feedback Device (10) would vibrate if a sound file is not played. .

23. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein upon receipt of the messages, the Outdoor Feedback Device (10) would turn on the

LED lights to display the receipt or non-receipt of a message. .

24. The interactive Real Time Feedback Method for outdoor use as claimed in Claim 18, wherein all the messages are displayed real time in social media applications.

25. A Feedback device used in the interactive Real Time Feedback Method as claimed in Claim 18, wherein the Outdoor Feedback Device (10) comprises the following:-

IR transmitter (20) for sending of messages;
IR receiver (22) for receiving of messages,
Trigger (26) to send message to a receiver (22),
A speaker (28) for broadcasting of a sound file,
On/Off Button (26)
LED lights to display the receipt or non-receipt of messages

26. The Outdoor Feedback Device (10) as claimed in Claim 25 which has additionally, a motor which can vibrate when the speaker (28) is not used.

27. The Outdoor Feedback Device (10) as claimed in Claim 25 which has additionally, an accelerometer (34) which can be triggered to send a message or signal upon being bumped.

28. The Outdoor Feedback Device (10) as claimed in Claim 25 wherein the user can select the user name using the LCD panel (30) with an UP and DOWN arrow (32) key, and transmit and feedback the merit/demerit point to the selected user name via the use of WLAN (Bluetooth, Zigbee or other RF means).

29. The Outdoor Feedback Device (10) as claimed in Claim 25 wherein the user selects a merit/demerit point and physically bumps into another Outdoor Feedback Device (10) rocking the accelerators simultaneously and feedback the merit/demerit point via the use of WLAN (Bluetooth, Zigbee or other RF means).