**Table 1:** Comparison between forward feedback data input and back error propagation [10-12].

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| **Feedforward data input (FFDI)** |
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| --- | --- | --- |
| * All the layers feed into one another from the input till output in the forward direction.
* By default, the architecture of FFDI assumes that all the nodes in a given layer are linked to those in the next layer.
* Therefore, the architecture of FFDI is almost fully defined except the loss function that is augmented in the output layer.
* The perceptron algorithm uses the perceptron criterion, this is not the only choice.

**Figure 1.** Feedforward data input schematic diagram. |  |  |
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| **Backward Error Propagation (BEP)**  |
| * It utilizes the chain rules defined mathematically to calculate gradients for each layer iteratively.
* It the most commonly used network for various applications.
* It is classified into two main phases: (a) Forward phase and (b) Backward phase.
* The forward phase is used to calculate the outputs and derivatives at different local nodes.
* The backward phase is used to collect the products of these local values all over the paths from the starting node till the output.

**Figure 2:** Backward Error Propagation Network schematic diagram. |