**Puustjärvi, J., & Pöyry, P. (2006). Information retrieval in virtual universities. *International Journal of Distance Education Technologies,* 4(3), 36-47.**

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Puustjärvi and Pöyry (2006) compare vector information retrieval against traditional

Boolean keyword-based query models to determine which is best suited in an e-learning

environment. When comparing the study data, Puustjärvi and Pöyry (2006) propose a

shared one stop e-learning portal (ONES) for virtual universities.

 Puustjärvi and Pöyry (2006) determined three issues with Boolean retrieval in learning environments:

1. Boolean retrieval relies on singular criteria ( e.g., a result is related or is unrelated)

2. It is difficult to determine educational object requirements in a Boolean setting

3. Search engines based on Boolean logic provide either too many or too few learning objects related to the query

 Puustjärvi and Pöyry (2006) yielded superior results utilizing vector model information retrieval. Vector model information retrieval incorporates a “similarity measure” integrating keywords, algorithms and fuzzy queries. Puustjärvi and Pöyry (2006) use algorithms to assign weights to metadata items within a document and fuzzy queries

rank data by degree of compatibility meeting its search criteria. Combining algorithms,

fuzzy queries and key words, the vector model yielded relevant learning objects while

filtering out those unrelated.

 Virtual universities use information and communication technologies to facilitate

core-learning functions. Currently, virtual universities operate separate portals that

hamper a learner’s ability to access resources at other virtual universities. Puustjärvi

and Pöyry (2006) propose ONES-project as an approach to integrate resources at virtual

universities that is easily accessible to learners. Application of the vector model within

virtual universities will necessitate an understanding of the vector information retrieval

model. Further study is necessary to evaluate vector model effectiveness in a variety of

e-learning settings. In conclusion, the ONES project must undergo further research and

analysis into the effectiveness in having a central repository for virtual universities.