and the second best results are underlined. Note that superscript * indicates a significance level of $p \le 0.05$ based on paired samples t-test between the best baseline and our EIDP. OK-Video **OK-Article** Dataset Metrics NDCG@5 HR@5 NDCG@10 HR@10 NDCG@20 HR@20 NDCG@5 HR@5 NDCG@10 HR@10 NDCG@20 HR@20 0 4 0 0

Table 1: Performance comparison of two groups of baselines and our EIDP on two datasets. The best results are marked in bold,

SASRec	0.0077	0.0131	0.0111	0.0236	0.0154	0.0408	0.0202	0.0332	0.0285	0.0592	0.0388	0.1001
ICLRec	0.0081	0.0131	0.0110	0.0223	0.0154	0.0396	0.0223	0.0362	0.0303	0.0615	0.0399	0.0995
DuoRec	0.0069	0.0115	0.0101	0.0214	0.0147	0.0348	0.0320	0.0505	0.0418	0.0812	0.0536	0.1282
MGNN-SPred	0.0080	0.0134	0.0115	0.0243	0.0162	0.0429	0.0241	0.0384	0.0326	0.0650	0.0438	0.1094
MGNN-SPred [†]	0.0080	0.0132	0.0112	0.0233	0.0154	0.0399	0.0239	0.0384	0.0322	0.0646	0.0427	0.1063

Duorecc	0.0009	0.0113	0.0101	0.0214	0.0147	0.0340	0.0320	0.0303	0.0410	0.0012	0.0330	0.1202
MGNN-SPred	0.0080	0.0134	0.0115	0.0243	0.0162	0.0429	0.0241	0.0384	0.0326	0.0650	0.0438	0.1094
MGNN-SPred [†]	0.0080	0.0132	0.0112	0.0233	0.0154	0.0399	0.0239	0.0384	0.0322	0.0646	0.0427	0.1063
MBHT	0.0087	0.0137	0.0119	0.0236	0.0165	0.0419	0.0284	0.0463	0.0384	0.0774	0.0506	0.1258
MR CTD	0.0082	0.0127	0.0112	0.0220	0.0152	0.0202	0.0160	0.0278	0.0240	0.0502	0.0224	0.0974

MGNN-SPred	0.0080	0.0134	0.0115	0.0243	0.0162	0.0429	0.0241	0.0384	0.0326	0.0650	0.0438	0.1094
MGNN-SPred [†]	0.0080	0.0132	0.0112	0.0233	0.0154	0.0399	0.0239	0.0384	0.0322	0.0646	0.0427	0.1063
MBHT	0.0087	0.0137	0.0119	0.0236	0.0165	0.0419	0.0284	0.0463	0.0384	0.0774	0.0506	0.1258
MB-STR	0.0082	0.0137	0.0112	0.0230	0.0153	0.0392	0.0169	0.0278	0.0240	0.0503	0.0334	0.0874

MGNN-SPred [†]	0.0080	0.0132	0.0112	0.0233	0.0154	0.0399	0.0239	0.0384	0.0322	0.0646	0.0427	0.1063
MBHT	0.0087	0.0137	0.0119	0.0236	0.0165	0.0419	0.0284	0.0463	0.0384	0.0774	0.0506	0.1258
MB-STR	0.0082	0.0137	0.0112	0.0230	0.0153	0.0392	0.0169	0.0278	0.0240	0.0503	0.0334	0.0874
NT .TD	0.0000	0.0405	0.0110	0.0045	0.0465	0.0400	0.0040	0.0406	0.0005	0.0488	0.0445	0 4 4 4 5

MBHT	0.0087	0.0137	0.0119	0.0236	0.0165	0.0419	0.0284	0.0463	0.0384	0.0774	0.0506	0.1258
MB-STR	0.0082	0.0137	0.0112	0.0230	0.0153	0.0392	0.0169	0.0278	0.0240	0.0503	0.0334	0.0874
NextIP	0.0083	0.0135	0.0119	0.0247	0.0165	0.0430	0.0249	0.0406	0.0335	0.0677	0.0445	0.1115

NextIP	0.0083	0.0135	0.0119	0.0247	0.0165	0.0430	0.0249	0.0406	0.0335	0.0677	0.0445	0.1115
DvMuS	0.0035	0.0058	0.0054	0.0115	0.0075	0.0202	0.0166	0.0272	0.0239	0.0501	0.0326	0.0848

0.0575*

33.72%

0.0329*

2.81%

0.0515*

1.98%

 0.0441^{*}

5.50%

 0.0865^*

6.53%

 0.0565^{*}

5.41%

0.1015

 0.1359^*

6.01%

DyMuS	0.0035	0.0058	0.0054	0.0115	0.0075	0.0202	0.0166	0.0272	0.0239	0.0501	0.0326	0.08
DvMuS ⁺	0.0025	0.0041	0.0040	0.0089	0.0061	0.0172	0.0212	0.0343	0.0298	0.0611	0.0399	0.10

 0.0237^{*}

43.64%

0.0136*

56.32%

EIDP

Improve.

0.0208*

51.82%

0.0179*

50.42%

0.0343*

38.87%